AIC Color 2017 **PROCEEDINGS** www.aic2017.org

13TH AIC CONGRESS

## **AIC 2017** JEJU, KOREA

**BEING COLOR** WITH HEALTH

16th-20th, October, 2017

Editors Youn Jin Lee, Jisoo Hwang, Hyeon Jeong Suk, Yung Kyung Park

Organized by ALL WKSCS







## CONTENTS

03	AIC President's Foreword
04	AIC, International Colour Association
05	AIC 2017 Chair's Preface
06	AIC 2017 Organizing Committee
09	Program Overview
16	Scientific Program  Monday, 16th October
61	Keynote Speech
65	Award Lecture
68	Invited Lecture
75	Author Index
89	AIC 2017 Sponsors
90	AIC 2017 Exhibitors



13TH AIC CONGRESS

### AIC 2017 JEJU, KOREA

#### **AIC President's Foreword**



I would like to welcome you to Jeju Island Korea for the AIC Congress 2017. AIC 2017 is an auspicious event as the Congress marks The Association Internationale de la Couleur's (AIC) Fiftieth Anniversary. The AIC was founded June 21st 1967 in Washington DC, USA during the 16th Session of the Commission Internationale de l'Éclairage (CIE). There were eight foundation members; USA – Inter–Society Color Council (Deane B. Judd), France – Centre d'Information de la Couleur (Yves LeGrand), Great Britain – The Colour Group (Robert W. G. Hunt), Spain – Comité Español del Color (Lorenzo Plaza), Sweden – Swedish Colour Group (Gunnar Tonnquist), Switzerland – pro/colore (Ernst Ganz), Japan – Color Science Association of Japan (T. Fukuda) and The Netherlands – Nederlandse Vereniging (J.L. Ouwettjes). The AIC currently has twenty–seven Regular Members.

In 1975 the AIC at the bequest of Betty Judd in memory of her husband, the AIC established the Deane B. Judd Award to recognise outstanding work in the field of color science. The list of recipients, from Dorothy Nickerson [1900–1985] (USA) in 1975 to Françoise Viénot in 2015 represents the International elite of colour science researchers. This year's winner of the Deane B. Judd Award is Professor Ronnier Luo whose name is synonymous with colour science. The AIC has recently established a new award for excellence in research in Colour in Arts, Design and Environment. The first of these awards will be presented in Jeju during the AIC Congress and I am delighted to advise that Professor Antal Nemcsics is the first recipient of this new AIC award.

AIC 2017 continues the tradition of the AIC being a truly global organisation with 160 oral and 250 poster presentations with delegates from thirty-seven countries. Professor Jinsook Lee and her colleagues from the Korean Society of Color Studies have done amazingly well in organising what will be a very successful AIC 2017 Congress in very trying circumstances

During the AIC General Assembly, the Regular members will be electing a new Executive Committee which will take office from 1<sup>st</sup> January 2018 until 31<sup>st</sup> December 2019. The Regular members will also be voting on the following initiatives:

- 1. IC Brand & Design Work Group Proposal
- 2. New Study Group for Arts and Design
- 3. Future banking arrangements

Make sure that you participate and make sure your votes count.

The future schedule of AIC Meetings is outstanding. The next meetings will be held in Lisbon, Portugal in 2018 hosted by Associação Portuguesa da Cor, in Buenos Aires, Argentina in 2019 hosted by Grupo Argentino del Color, Toulouse, France in 2020 hosted by Centre Français de la Couleur and the next Congress in Milan in 2021 hosted by Gruppo Del Colore – Associazione Italiana Colore. In June 2018 there will also be a special joint ISCC and AIC meeting to celebrate the Munsell Centenary. This will be held at the Massachusetts College of Art and Design in Boston.

Please do not forget to celebrate the International Colour Day. To increase awareness in colour in the wider community the AIC has been promoting the International Colour Day which falls on the March Equinox. This concept has been enthusiastically adopted by a number of the Regular Members. Our aim is to have UNESCO recognize the ICD but firstly we need all Regular Members to take ownership of the ICD.

Enjoy this colour spectacular on the beautiful island of Jeju, meeting again with long-time friends and making new friends in the global colour community.

Nick Harkness

**Nick Harkness**President
AIC (Association Internationale de la Couleur



#### AIC, International Colour Association

www.aic-color.org

#### **AIC Executive Committee**

President Nick Harkness (Australia)
Past President Javier Romero (Spain)
Vice President Tien-Rein Lee (Taiwan)

Secretary/Treasurer Lindsay MacDonald (United Kingdom)

Committee Members Jin-Sook Lee (Korea)

Maria João Durão (Portugal) Leslie Harrington (USA) Gabriela Nirino (Argentina)

#### **Member Countries**

Argentina Grupo Argentino Del Color
Australia Colour Society Of Australia
Brazil Associação Pró-Cor Do Brasil
Bulgaria Colour Group - Bulgaria

Canada Colour Research Society Of Canada

Chile Asociación Chilena Del Color
China Color Association Of China
Croatia Hrvatska Udruga Za Boje
Finland Suomen Väriyhdistys Svy Ry
France Centre Français De La Couleur
Germany Deutscher Verband Farbe

**Great Britain** The Colour Group

Hungarian National Colour Committee

Italy Gruppo Del Colore – Associazione Italiana Colore

Japan Color Science Association Of Japan Korea Korean Society Of Color Studies

Mexico Asociación Mexicana De Investigadores Del Color Netherlands Nederlandse Vereniging Voor Kleurenstudie

Norway Forum Farge

Portugal Associação Portuguesa Da Cor Slovenia Slovensko Zdruzenje Za Barve Spain Comité Español Del Color Sweden Stiftelsen Svenskt Färgcentrum

Switzerland Pro/Colore

TaiwanColor Association Of TaiwanThailandThe Color Group Of ThailandUnited StatesInter-Society Color Council

#### **AIC Associate Members**

North America International Association of Color Consultants/

Designers

USA Colour Marketing Group

#### **AIC Study Groups**

Color Education (CE)

Chair: Robert Hirschler

Environmental Color Design (ECD)
Chair: Verena M. Schindler

Color Vision and Psychophysics (CVP)

Chair: Katsunori Okajima
The Language of Color (LC)
Chair: Dimitris Mylonas
Co-chair: Galina Paramei

13TH AIC CONGRESS

### AIC 2017 JEJU, KOREA

#### AIC 2017 Chair's Preface



On behalf of the 13th AIC Congress Organizing Committee, we welcome you to the beautiful Jeju Island. And I sincerely appreciate your participation in the long journey to attend the greatest color event of the global village.

Korea Society of Color Studies has prepared this Congress for 6 years since Korea was chosen to host the 13th AIC Congress under the decision of the AIC Executive Committee in the AIC Midterm Meeting which was held in Zurich, Switzerland in 2011.

Main theme of the AIC 2017 is 'Being Color with Health'. 'Health' has the most important value of our generation. The meaning of 'Health' includes everything related with human life, science, psychology, and design as well. Every topic related to color is embedded under the

twelve main topics. As follows: Color and Health, Color and Environment, Architectural Color Design, Color in Art, Color Psychology, Color Education, Color in Cultures, Color and Light, Color Science and Technology, Color in Product Design, Color in Communication and Color Application.

The Congress received about 572 Abstract submissions from 43 countries and the abstracts were reviewed and selected by the International Scientific Committee consisting of 107 experts from around the world. The total number of papers that will be presented in this Congress is 422 including 150 oral presentations, 257 poster presentations, 2 Keynote Speeches, 11 Invited Lectures, and 2 Award Lectures. In addition, there are 2 workshops with special programs. The Workshop I is 'Color Psycho Dynamics –A blueprint for transformational living' and Workshop II is 'Korea–China Color Design Trend'.

This year is the 50th anniversary of AIC Foundation. To celebrate the 50th anniversary, we have prepared special events such as 'Color and Culture Exhibition' and 'Brilliant Memories of AIC for last 50 Years' during the AIC Jeju Congress. 'the Color and Culture Exhibition' introduces the color culture of each AIC member country and 'Brilliant Memories of AIC for last 50 Years' provides a forum that shows pictures and images reflecting AIC's 50 years of history. Aside from this, we planned 'Korean Folk Painting Exhibition' as a special exhibition, which exhibit the works of folk painting artists that represent Korea. So it will be a good opportunity to understand the Korean traditional beauty.

This Congress is comprised of a lot of effort and time investment by the members of the Organizing Committee. I am confident that this Congress will be finished with success since this Congress was prepared with the generous dedication of Organizing Committee members. I would like to express my heartfelt gratitude to each one of the Organizing Committee.

I sincerely appreciate to the sponsors and organizations which generously supported for this event. I am confident that Korea's color academia and industry will grow bigger in the future thanks to your deep interest and encouragement for the AIC 2017 Congress.

In this beautiful Jeju Island where is honored UNESCO's Triple Crown, I hope all of you who attended this event will return with good memory and warm feeling. Also, I sincerely hope that you will make a good friendship in the global color community and create new ideas to further develop your color research.

Jin-Sook Lee

AIC 2017 Organizing Committee

#### AIC 2017 Organizing Committee

#### **Congress Chair**

Jin-Sook Lee Chungnam National University

#### **Local Organizing Committee**

Chair Gyoung-Sil Choi **Ewha Womans University** Vice-Chair Chang-Soon Kim **INNOPOLIS Foundation** Members He-Sung Park **Ewha Womans University** Min-Kyoung Kim KMK Color Institute Young-Mi Kim MCM Korea Business Jang-Seok Kim Hanbat National University Seok-Hyun Lee **Chungang University** 

Eun-Mi Yu Semyung University
Soon-Duke Kang Dongeui Institute of Technology

Yung–Kyung Park Ewha Womans University

Young-Shin Kwak UNIST

Yoo-Sun Kim Sahmyook University
Hea-Won Kim Dongseoul University
Youn-Jin Lee Hongik University
Jin-Hyun Park JUNO Beauty

Kyung-Nam Lee Daegu Gyeongbuk Design Center

Yeon-Ja Jung Konkuk University

Young-Shin Choi Chungnam National University

Ju-Yeon Kim Soongsil University

Hyang-Lan Kim SAMHWA Paint Industrial Co., Ltd.

Jin-Kyung Paik Inje University

Hyeon-Jeong Suk KAIST

Bok-Shub Shong Hanbant National University

Hye-Gyung Yoon Yonsei University

Se-Lee Lee Ewha Womans University

Jeong-Mi Lee Induk University
Hye-Kyung Lee SOHO & NOHO
Choong-Hyun Cho Shingu College

Hyo-Jung Kim Ewha Womans University

Tae-Sun Kim Kyungil University

Ji-Soo Han Sungshin Womens University

Ji-Soo Hwang Korea Research Institute of Standards and Science

Hyun-Sun Kim Kimhyunsun DESIGN Su-In Kim Jeonju University

#### 13TH AIC CONGRESS

### AIC 2017 JEJU, KOREA

#### **Advisory Committee**

Don Soh Park Ajou University
Yang Seob Lee Konkuk University
Mann-Young Lee Korea University

Gi-Chul Kim Sejong Cyber University

Young-Gull Kwon Kaywon University of Art & Design

Kyung-Don Rhee Shingu College

YunSun Park Korea Color Design Institute
Yoo Na Jeong Sangmyung University

Jooyun Kim Hongik University Korean Institute of Spatial Design

#### **International Scientific Committee**

Miyoshi Ayama, Japan Gabriel Marcu, USA John Barbur, United Kingdom John Mccann, USA

Bergit Bergstrom, Sweden Manuel Melgosa, Spain Valerie Bonnardel, United Kingdom Yoichi Miyake, Japan

Sabina Bracko, Slovenia Yoko Mizokami, Japan Jose Luis Caivano, Argentina Shinji Nakamura, Japan Patrick Callet, France Shigeki Nakauchi, Japan

Ingrid Calvo, Chile

Akos Nemcsics, Hungary

Ellen Carter, USA

Vien Cheung, United Kingdom

Juan Luis Nieves, Spain

Gabriela Nirino, Argentina

Paula Csillag, Brazil Peter Nussbaum, Norway
Osvaldo Da Pos, Italy Zena O'Connor, Australia
Motonori Doi, Japan Tomoko Obama, Japan

Maria Joao Durao, Portugal Katsunori Okajima, Japan

Mark Fairchild, USA Hilmi Or, Turkey

Margarida Gamito, Portugal Naoyuki Osaka, Japan
Paul Green–Armytage, Australia Li–Chen Ou, Taiwan

Yulia Griber, Russia Maria Papadopoulou, Denmark

Helen Gurura, South Africa Yungkyung Park, Korea Esther Hagenlocher, USA Jussi Parkkinen, Finland

Aran Hansuebsai, Thailand Carinna Parraman, United Kingdom

Jon Hardeberg, Norway

Nick Harkness, Australia

Leslie Harrington, USA

Markku Hauta–Kasari, Japan

Javier Hernandez–Andres, Spain

Esther Perlaes, Spain

Alessandro Rizzi, Italy

Frank Rochow, Germany

Maurizio Rossi, Italy

Yamamoto Sari, Japan

Robert Hirschler, Brazil Verena M Schindler, Switzerland

Takahiko Horiuchi, Japan Kevin Smet, Belgium John Hutchings, United Kingdom Hyeon-Jeong Suk, Korea

Keita Hirai, Japan

Tetsuya Sato, Japan

Jisoo Hwang, Korea
Taiichiro Ishida, Japan
Eric Kirchener, Netherlands
Ines Klemm, Switzerland
Youngshin Kwak, Korea
Natacha Le Duff, Germany
Tien-Rein Lee, Taiwan
Younjin Lee, Korea
Ronnier Ming Luo, China

Lindsay W. MacDonald, United Kingdom

Yoshitsugu Manabe, Japan

Pei-Li Sun, Taiwan Vincent Sun, Taiwan

Elza Tantcheva-Burdge, United Kingdom

Shoji Tominaga, Japan Francoise Vienot, France

Stephen Westland, United Kingdom

Haisong Xu, China Hiroshisa Yaguchi, Japan Guanrong Ye, China Pietro Zennaro, Italy

Veronica Zybaczynski, Romania

## PROGRAM OVERVIEW

Program at a Glance
Workshop
Keynote Speech
Invited Lecture
Award Lecture
Cultural & Social Events
Special Exhibition
Exhibition

## **AIC 2017** Program at a Glance

1400-1800	Date	Time	Program / Location								
1800-1920   Westorner & Exception (2005)   Westorner & Excep		14:00-16:00	Workshop 1 / #401								
0730-1800		16:30-19:30	Registration Open / Lobby								
18th October   1050-1220   1330-1510   1220-1330   1		18:00-19:30		Welcome Reception / Ocean View, 5F							
1030-1050   1230		07:30-18:00		Registration & Exhibition Open / Lobby							
18th October   10.501-1230   Exhibition   1230-1310   Exhibition   12		08:30-10:30		OS01 Art & Culture 1 / Halla A OS02 Design & Communication 1 / Halla B OS03 Environment & Architecture 1 / Samda							
Monday    Mond		10:30-10:50	Exhibition	Coffee Break / Lobby							
1230-1330		10:50-12:30		Opening Ceremony & Keynote Speech 1 / Tamna A, 5F							
15:10-17:10   OS94 Art & Culture 2 / Halta A OS95 Design & Communication 2 / Halta B OS96 Environment & Architecture 2 / Samda	()	12:30-13:30	Lobby	Lunch / Ocean View, 5F							
17th October   1020-1220   Exhibition   1020-1220   Code   1020-1220		13:30-15:10		Poster Session 1 & Coffee Break / Lobby							
17th October (Tuesday)		15:10-17:10		OS04 Art & Culture 2 / Halla A OS05 Design & Communication 2 / Halla B OS06 Environment & Architecture 2 / Samda							
17th October (Tuesday)   1020-1220 (Tuesday)   1220-1330		08:00-18:00		Registration & Exhibition Open / Lobby							
17th October (Tuesday)   1020-1220   Exhibition   Lobby   Lunch / Ocean View, 5F		09:00-10:00		Keynote Speech 2 / Halla A							
1024-1220   1024-1220   1220-1330   Exhibition   Libby   Exhibition		10:00-10:20		Coffee Break / Lobby							
1220-1330		10:20-12:20	Exhibition								
15:10-18:00   Study Group 1. SQLC/Halla A   Study Group 2. SQCE/Halla B   Study Group 3. ECD/Samda	(Tuosuuy)	12:20-13:30									
18th October (Mednesday)   10:50-12:05   220th October (Thursday)   10:00-12:05   20:10:05   20:1		13:30-15:10		Poster Session 2 & Coffee Break / Lobby (13:00-15:00) Workshop 2 / Halla A							
18th October (Wednesday)		15:10-18:00		Study Group 1. SGLC / Halla A Study Group 2. SGCE / Halla B Study Group 3. ECD / Samda							
18th October (Wednesday)   10:30-10:30   20:30-10:30) OS10 Science & Technology 2   OS11 Environment & Architecture 4 / Halla B   O8:30-10:30) OS12 Color & Health 1 / Samda   Coffee Break / Lobby		08:00-15:00		Registration & Exhibition Open / Lobby							
10:30-10:50   Exhibition   Coffee Break / Lobby   Coffee Break / L				(08:30-10:30) <b>OS10</b> Science & Technology 2 / <b>OS11</b> Environment & Architecture 4 / Halla B (08:30-10:30) <b>OS12</b> Color & Health 1 / Sand							
18th October (Wednesday)		10:30-10:50		nalia A							
12:20-13:00		10:50-12:20		(10:50-12:35) <b>OS13</b> Science & Technology 3 / OS14 Psychology & Education 1 / Halla B							
15:00-18:30   Excursion / Jeju Stone Park	(wednesday)	12:20-13:00	LODDy								
19th October (Thursday)   20th October (Friday)   20		13:00-15:00		General Assembly / Halla A							
19th October (Thursday)   10:05-12:05   Exhibition   12:05-13:30   Exhibi		15:00-18:30	Excursion / Jeju Stone Park								
19th October (Thursday)   10:05-12:05   Exhibition   12:05-13:30   Exhibi		08:00-18:00		Registration & Exhibition Open / Lobby							
19th October (Thursday)		09:00-09:45									
Thursday) 12:05-13:30 12:05-13:30 12:05-13:30 12:05-13:30 12:05-13:30 15:10 15:10-17:10  OS19 Science & Technology 5 / Halla A OS20 Psychology & Education 2 / Halla B (14:55-17:10) OS21 Color & Light 2 / Samda Official Congress Banquet / Cliff Garden, Hyatt Regency Jeju  O8:00-12:00 O9:00-09:45 O9:45-10:05 O9:45-10:05 O9:22 Science & Technology 6 / Halla A OS23 Psychology & Education 3 / Halla B OS24 Color & Health 4 / Samda		09:45-10:05		Coffee Break / Lobby							
12:05-13:30   Lobby   Lunch / Ocean View, 5F	19th October	10:05-12:05	Evhibition	OS16 Science & Technology 4 / Halla A OS17 Color & Health 3 / Halla B OS18 Color & Light 1 / Samda							
15:10-17:10		12:05-13:30		Lunch / Ocean View, 5F							
18:00-20:00  Official Congress Banquet / Cliff Garden, Hyatt Regency Jeju  Registration & Exhibition Open / Lobby  O9:00-09:45  O9:45-10:05  Dos22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda		13:30-15:10		Poster Session 3 & Coffee Break / Lobby							
20th October (Friday)  20th October (Friday)  10:05-12:05  08:00-12:00  Registration & Exhibition Open / Lobby  Award Lecture 2 / Halla A  Coffee Break / Lobby  OS22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda		15:10-17:10		OS19 Science & Technology 5 / Halla A OS20 Psychology & Education 2 / Halla B (14:55-17:10) OS21 Color & Light 2 / Samda							
20th October (Friday)  09:00-09:45  09:45-10:05  10:05-12:05  09:45-10:05  Exhibition Lobby  10:05-12:05  OS22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda		18:00-20:00		Official Congress Banquet / Cliff Garden, Hyatt Regency Jeju							
20th October (Friday)  09:00-09:45  09:45-10:05  10:05-12:05  09:45-10:05  Exhibition Lobby  10:05-12:05  OS22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda		08:00-12:00		Registration & Exhibition Open / Lobby							
(Friday)  10:05-12:05  Lobby  Coffee Break / Lobby  10:05-12:05  OS22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda											
10:05-12:05  OS22 Science & Technology 6 / Halla A  OS23 Psychology & Education 3 / Halla B  OS24 Color & Health 4 / Samda		09:45-10:05		Coffee Break / Lobby							
12:10-12:40 Closing Ceremony / Tamna A, 5F	(rnudy)		LODBY	OS22 Science & Technology 6 / Halla A OS23 Psychology & Education 3 / Halla B OS24 Color & Health 4 / Samda							
		12:10-12:40									

#### **Program Overview**

#### Workshop Program

#### Workshop I. Colour Psycho Dynamics - A blueprint for transformational living

- Date and Time: 14:00-16:00 on October 15 (Sun), 2017
- · Place: #401
- · Organizer and Speaker: Mark Wentworth

#### Workshop II. Korea-China Color Design Trend

- · Date and Time: 13:00-15:00 on October 17 (Tue), 2017
- · Place: Halla A, 3F
- · Chair: Young Mi Kim (Executive Vice President, MCM Korea Business, Korea)
- · Speakers
- Jianming Song (Professor, China Academy of Art, China)
- Li Wei (Professor, Tsinghua University, China)
- Zhou Xin (Editor, Researcher, DIC Color & Design. In, China)
- Won-jung Choi (Researcher, Ewha Womans University Color Design Research Institute, Korea)
- Jin Hee Lim (Lead Designer, LF DAKS LADIES Color Division, Korea)
- Soo Jin Jang (Manager Color & Trim, Kia Design Center, Korea)

#### Keynote Speech

#### Keynote Speech I

- · Date and Time: 10:50–12:30 on October 16 (Mon), 2017
- · Place: Tamna A, 5F
- · Speaker



#### **Suro Hwang**

President, Korean Royal Silk Flower Institute Korea

#### Keynote Speech II

- · Date and Time: 09:00–10:00 on October 17 (Tue), 2017
- · Place: Halla A, 3F
- · Speaker



#### Jianming Song

China Academy of Art, China Fashion and Color Association

#### **Invited Lecture**



08:30-10:30 on October 16 (Mon) at Halla B, 3F

Hyeon-Jeong Suk

(Korea Advanced Institute of Science and Technology (KAIST), Korea) Creating the Viewing Experience of Color in Design Practice



15:10–17:10 on October 16 (Mon) at Halla B, 3F Se-Lee Lee (Ewha Womans University, Korea) 2018–2019 Color & Material Trend



09:00-10:30 on October 18 (Wed) at Samda, 3F

John Barbur

(City, University of London, United Kingdom)

Colour in Employment: A New Colour Grading System with Applications in Healthcare and Visually-Demanding Occupations



09:00–10:30 on October 18 (Wed) at Halla A, 3F **Haisong Xu** (Zhejiang University, China) Image Quality Assessment on Mobile Devices



10:50–12:20 on October 18 (Wed) at Halla A, 3F **Lindsay MacDonald** (Association Internationale de la Couleur, United Kingdom) Melanopsin and Colour Vision



10:50–12:20 on October 18 (Wed) at Samda, 3F

Anadi Martel
(International Light Association (ILA), Belgium)

Colour for Health: Update on the Latest Developments in Light Therapy



10:50–12:20 on October 18 (Wed) at Halla B, 3F

Shin'ya Takahashi

(Tokaigakuen University, Japan)

The Possibilities and Limitations of the Psycho-behavioral Effects of Color



10:05-12:05 on October 19 (Thu) at Samda, 3F

Jeong-Tai Kim

(Kyung Hee University, Korea)

Regulating Artificial Light at Night for Protecting Health and Sustainability in South Korea



10:05-12:05 on October 19 (Thu) at Halla B, 3F

Tien Rein Lee

(Chinese Culture University, Taiwan)

A Modern Approach to Health in Conventional Chinese Color Thought



10:05–12:05 on October 19 (Thu) at Halla A, 3F **Hirohisa Yaguchi** (Chiba University, Japan) Applications of CIE2015 Cone–Fundamental Based Colorimetry



14:55–17:10 on October 19 (Thu) at Samda, 3F

Yoshi Ohno
(CIE President, National Institute of Standards and Technology, USA)
CIE Research Strategy – Future of Color Quality Metrics for Lighting

#### **Award Lecture**

#### 2017 AIC Deane B. Judd Award

- · Date and Time: 09:00-09:45 on October 19 (Thu), 2017
- · Place: Halla A, 3F
- · Awardee: Ming Ronnier Luo (United Kingdom)

#### 2017 AIC Colour Award in Art, Design and Environment

- · Date and Time: 09:00-09:45 on October 20 (Fri), 2017
- · Place: Halla A, 3F
- · Awardee: Antal Nemcsics (Hungary)

#### **Cultural & Social Events**

Welcome Reception	Come and sample culinary delights from across Jeju Island, we welcome you to AIC 2017.  · Date & Time: 18:00–19:30 on October 15 (Sun), 2017  · Place: Ocean View, 5F
Opening Ceremony	Making the opening of the Congress, the Opening Ceremony will celebrate the gathering of participants around the globe.  Date & Time: 11:00–11:30 on October 16 (Mon), 2017  Place: Tamna A, 3F
Group Photo	Group Photo will be taken as the AIC Congress' tradition dictates.  Date & Time: 12:35 on October 17 (Tue), 2017  Place: Lobby, 3F
Excursion	The Congress will conclude with an excursion to the most famous tour spot in Jeju island. Register and accompanying person can participate without additional registration.  Date and Time: 14:30–19:00 on October 18 (Wed), 2017  Place: Jeju Stone Park
Official Banquet	Featuring fascinating 'Jeju Traditional Performance', this official banquet will be a memorable night in an exotic atmosphere.  Date & Time: 18:00–20:00 on October 19 (Thu), 2017  Place: Cliff Garden, Hyatt Regency Jeju  Admission Fee: USD 100
Closing Ceremony	Participants will have chances to look back what's happened during the Congress.  · Date & Time: 12:30–13:00 on October 20 (Fri), 2017  · Place: Tamna A, 3F

#### Special Exhibition I.

#### The Exhibition Commemorating the 50th anniversary of foundation of AIC

· Exhibition I. Color & Culture

A special exhibition titled "Color and Culture" will be held during the 13th AIC Congress. The exhibition will provide an opportunity for each member country to bring their vision, concepts, and ideas in color and culture.

· Exhibition II. Brilliant Memories of AIC for last 50 Years

To celebrate the 50th anniversary of the AIC, the Organizing Committee plans a history exhibition during the Congress. This exhibition will give a chance to share memories of the International Color Association (AIC) since its start in 1967.

- · Exhibition Period: October 16 (Mon) 20 (Fri), 2017
- · Place: Lobby, 3F



#### Special Exhibition II. Korean Folk Painting Exhibition

In Korean traditional folk paintings, we can feel the sensibility of our people that enjoyed the magical and symbolic meanings and the stories of nature, human being, and life. Korean traditional folk paintings is a culture that Koreans enjoyed by the royal palace to the common people and able to feel the aesthetics of Koreans.

- · Exhibition Period: October 16 (Mon) 19 (Thu), 2017
- · Place: #301

#### **Exhibition**

AIC 2017 Exhibition booth will be operated in the lobby (3F) of the ICC Jeju according to the following schedule.

- · October 16 (Mon), 07:30 ~ 18:00
- · October 17 (Tue), 08:00 ~ 18:00
- · October 18 (Wed), 08:00 ~ 15:00
- · October 19 (Thu), 08:00 ~ 18:00
- · October 20 (Fri), 08:00 ~ 12:00

# SCIENTIFIC PROGRAM

Monday, 16th October
Tuesday, 17th October
Wednesday, 18th October
Thursday, 19th October
Friday, 20th October



#### Scientific Program

Monday, 16th October

#### **Oral Sessions**

OS01: Art & Culture I

08:30-10:30 / Halla A Hall

- OSO1-1 A Study of the Descriptive Color Word in the Chinese Tradition: Yellow's Case
  Hsueh-Fen Lin (Cheng Shiu University, Taiwan), Shu-Ping Feng (Kao Yuan University, Taiwan)
- OSO1-2 Soleil de minuit the Spectral Design of 14 Glass Panels for the Montréal Metro Adrien Gary Lucca (ENSAV La Cambre, Belgium)
- OSO1-3 A Study on Modern Art Expression of Cheeloo Colored Glaze Li Liu (Zibo Vocational Institute, China)
- OSO1-4 Digital Restoration of Van Gogh's Painting Field with Irises near Arles

Eric Kirchner (AkzoNobel Performance Coatings, Netherlands), Ivo van der Lans (AkzoNobel Performance Coatings, Netherlands), Frank Ligterink (Cultural Heritage Agency, Netherlands), Muriel Geldof (Cultural Heritage Agency, Netherlands), Art Ness Proano Gaibor (Cultural Heritage Agency, Netherlands), Ella Hendriks (Van Gogh Museum, Netherlands), Koen Janssens (University of Antwerp, Belgium), John Delaney (National Gallery of Art, USA)

- OSO1-5 Designing symbol color for regional revitalization A study of black in Kagoshima Akiyo Makino (Kagoshima University Innovation Center, Japan)
- OSO1-6 Wabi and Sabi as the Background of Japanese Color Aesthetics: Pursuing the Special Qualities of Japan's Color Sensibility

  Kohii Yoshimura (Kansai Gaidai University, Japan), Yuko Yamada (Color Instructor and Illustratou,
- Japan), Stephen Shrader (Notre Dame Seishin University, Japan)
- OSO1-7 Improving Color Fidelity of Heritage Digital Copies through Representative Samples
  Changyu Diao (Cultural Heritage Institute of Zhejiang University, China), Hong He (Zhejiang Institute of Metrology, China), Jinjin Mao (Cultural Heritage Institute of Zhejiang University, China), Zhemin Chen (Zhejiang Institute of Metrology, China)
- OSO1-8 How a 6-band LED and RGB Camera based Multispectral Imaging System Performed in COSCH Round-Robin Test

Raju Shrestha (Oslo and Akerhus University College, Norway)



<b>OSO2</b> :	Design	& C	ommuni	ication I

08:30-10:30 / Halla B Hall

OSO2-1,2 (Invited) Creating the viewing experience of color in design p	oractice
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Hyeon–Jeong Suk (Department of Industrial Design, KAIST, Korea)

#### OSO2-3 The Distribution of Color Tones in CIELAB Space

Yu-Wen Huang (Tatung University, Taiwan), Wen-Yuan Lee (Tatung University, Taiwan)

#### OSO2-4 Color Appearance in Oriental Minimalist Product Design

Yiju Chen (Yunlin University, Taiwan), Ching Liang Wang (Yunlin University, Taiwan)

#### OSO2-5 Gender and Cultural Effects on Consumer Colour-Purchase Decisions

Luwen Yu (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom), Xinxiong Liu (Huazhong University of Science and Technology, China)

#### OSO2-6 Comparison of Automotive Exterior Coating in Europe, Japan and South Korea according to Color

and Texture Distribution by Gonio-photometric Masayuki Osumi (Office Color Science Co., Ltd., Japan)

#### OSO2-7 Colours in Signage Typography - Commercial Street, Bangalore

Narayanan Krishnaswamy (BRBNMPL, India)

#### **OSO2-8** Designers Perspective: Colour as a catalyst for improving accessibility?

Gyeonghwa Lee (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom), Bryan Matthews (University of Leeds, United Kingdom), Vien Cheung (University of Leeds, United Kingdom)

#### **OS03: Environment & Architecture I**

08:30-10:30 / Samda Hall

#### OSO3-1 Developing a Method for Generating Colour Palette from Landscape Images

Jie Yang (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom), Kaida Xiao (University of Leeds, United Kingdom)

#### OSO3-3 A Comparative Study on the Color Planning of Landscape planning in South Korea

MinJung Seo (University of Tsukuba, Japan)

#### **OSO3-4** Studies on Color in Residential Architecture for the Elderly

Ana Torres Barchino (UPV, Spain), Juan Serra Lluch (UPV, Spain), Jorge LLopis Verdú (UPV, Spain), Anna Delcampo Carda (UPV, Spain)



- Smart Cities colors: the new intelligent cities in Asia and the new intelligent cities in Europe. Why are they different in theirs colors in the architectural color design?

  Ana Claudia Oliveira (CIAUD Portugal, Portugal)
- OSO3-6 An Analysis of the Scandinavian Colour Scales as a Tool in Colour Design Berit Bergström (NCS Colour AB, Sweden)
- The Study of Phycoerythrin as Natural Pink Protein

  Bumho Yoo (HuGeX Co., Ltd., Korea), Chi-Hu Park (HuGeX Co., Ltd., Korea), Hyein Kim (BIO-FD&C Co., Ltd., Korea), Seung Hwan Ryu (BIO-FD&C Co., Ltd., Korea), Choonhee Yoon (BIO-FD&C Co., Ltd., Korea), Jiyeon Kim (BIO-FD&C Co., Ltd., Korea), Hyo Hyun Seo (BIO-FD&C Co., Ltd., Korea), Jeong Hun Lee (BIO-FD&C Co., Ltd., Korea), Atul Kulkarni (BIO-FD&C Co., Ltd., Korea), Young Jun Kim (PicoTera Co., Ltd., Korea, Chungwoon Univ., Korea), Jisoo Han (Sungshin Woman's Univ., Korea), Sang Hyun Moh (BIO-FD&C Co., Ltd., Korea)

#### Opening Ceremony & Keynote Speech I

Keynote Speech I: Suro Hwang, Korean Royal Silk Flower Institute 10:50–12:30 / Tamra A Hall

#### Poster Session I

**PS01: Art, Culture, Design, Communication, Environment** 13:30–15:10 / Lobby, 3F

- The Feasibility of Establishing Color Imagery Scales for Various Constructional Landscapes
  Wen-Guey Kuo (Chinese Culture University, Taiwan), Yu-Pin Li (Chinese Culture University, Taiwan),
  Yuh-Chang Wei (Chinese Culture University, Taiwan), Chih-Wen Cheng (Chinese Culture University,
  Taiwan), Wei-Min Fu (Chinese Culture University, Taiwan)
- **PSO1-O2** The Cabin Lighting Colour Preference of Chinese People WenWen Song (Tsinghua University, China), JunWei Wang (Boeing China, China)
- **PS01-03** Study on the Color Environment of Street Furniture in Samsan-ro, Ulsan, South Korea Sunyoung Shin (Hongik University, Korea), Gyoobaek Lee (University of Ulsan, Korea)
- PSO1-O4 A Study on Senior Welfare Center Color Environment Focused on Busan City –
  WonJi Kim (Pusan National University, Korea), SoYeon Yang (Pusan National University, Korea),
  TaeKyung Lee (Pusan National University, Korea)



PS01-05	A Study on the Color Practice of Regional Architecture in Modern Scenic Pastoral Cities Ziyu Chen (China Academy Of Art, China)
PS01-06	Analysis on Color Environment Characteristics of Small City Parks' Social Sports Facilities in Seoul·Tokyo Junhyung Lim (Inje University, Korea), Jiyoung Oh (Inje University, Korea), Heykyung Park (Inje University, Korea)
PS01-07	A Study on The Color Change according to The Height of Building by The Daylight Kye-Ok Shin (Korea National University of Transportation, Korea)
PS01-08	Study on Change Tendency of Exterior Color in Apartment Housing Seokhyun Lee (Chungang University, Korea)
PS01-09	Study of Nursing Home's Color Environment according to Space Function Yerim Choi (Inje University, Korea), Mulin Jeong (Inje University, Korea), Heykyung Park (Inje University Korea)
PS01-10	Comparative Analysis on Characteristics of Color Uses for Outdoor Advertisement between before and after Signboard Improvement Project (Focused on Signboard Improvement Project in Ganghwa-gun, Incheon Mi-sun Lee (Korea Out of Home Advertising Center, Korea), Gyoung-sil Choi (Ewha Womans University Korea)
PS01-11	Study on a Change Tendency of Exterior Color in Apartment Housing Seokhyun Lee (Chungang University, Korea)
PS01-12	Color Guidelines for Integrating Lake View into Detached Single Family House Complex Hyun Sun Kim (Hongik University, Korea)
PS01-13	An Analysis of Colors and Chromas of LED Lighting for Improving Emotional Stability and Concentration in Youth Kwang Hyun Choi (Chungnam National University, Korea), Ji Young Park (Chungnam National University Korea), Moon Su In (Chungnam National University, Korea), Jin Sook Lee (Chungnam National University, Korea)
PS01-14	A Study on the Environment Color Planning of Water Resources Management – Case Study of Dongducheon City Rain Water Pump Station – Jung-Eun Lee (Chung-Ang University, Korea), Seok-Hyun Lee (Chung-Ang University, Korea)
PS01-15	A Study on Applying Four Seasons Color Theory of Personal Color to Space Image Geoni Lim (Hongik University, Korea)



PS01-16	Planning	of	Memorial	History	Park	using	Abandonded	Gyeongchun	Line	Site	-Targeting
	Hwarango	lae	Abandond	ed Statio	n-						

Youngdae Kim (Sahmyook University, Korea), MyungSun Kim (Sahmyook University, Korea), SonHyung Kim (Sahmyook University, Korea), HwanHee Lee (Sahmyook University, Korea)

#### **PS01-17** Color Plan of Noryangjin Fish Market Section for Environmental Improvement

DoKyung Kim (Sahmyook University, Korea), SaeRum Yang (Sahmyook University, Korea), DaMi Jung (Sahmyook University, Korea), SangEun Shin (Sahmyook University, Korea), YooSun Kim (Sahmyook University, Korea)

Suggestion of Nature-friendly Color Arrangement of Apartment Considering the View of Buramsan **PS01-18** in Korea -Targeting Sangye Byeoksan Apartment in Korea-

> Subin Lee (Sahmyook University, Korea), Yujin Jung (Sahmyook University, Korea), Sueran Choi (Sahmyook Environmental Green Design Research Institute, Korea)

PS01-19 Environmental Color in a Historical Cultural Space in an Urban Area: Focusing on the Nakwon Instrument Shopping Center in Korea

> SeungHyun Kim (Sahmyook University, Korea), YoungJi Ko (Sahmyook University, Korea), Jiwon Kim (Sahmyook University, Korea), YooSun Kim (Sahmyook University, Korea)

**PS01-20** Color Effect of Nature on Children's Art Education through Food Ingredients

Dahyun Lee (Hongik University, Korea), YounJin Lee (Hongik University, Korea)

**PS01-21** A Study on Accent Color Recognition by Color Properties

Jung Hee Joo (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)

**PS01-22** Analysis of Dominant Colors and Color Scheme of Good Design Signboards in South Korea

Minjung Seo (University of Tsukuba, Korea), Gyoungsil Choi (Ewha Womans University, Korea)

**PS01-23** Color Guidelines for Bukchon Hanok Village on Alley Landscape -focused on Gamgodang-gil

> YuJin Choi (Hongik University, Korea), SuJin Han (Hongik University, Korea), YoungMin Song (Hongik University, Korea)

**PS01-24** Color Analysis of Decorative Court Paintings in the "Late Joseon Dynasty"

Yunmi Oh (Ewha Womans University, Korea)

PS01-25 A Study on Color Education for Creative Design Thinking

Eunmi Yu (SeMyung University, Korea)

PS01-26 Spirituality of color in traditional colors focused on Obangsaek and Chakra for well-being and healing environments

Hye-Gyung Yoon (Yonsei University, Korea)

**PS01-27** A Study on the Analysis of Color Status of General Hospital Sign System

Hyunjee Lee (Ewha Womans University, Korea), Changsoon Kim (Ewha Womans University, Korea)

13TH AIC CONGRESS
<b>AIC 2017</b>
<b>JEJU, KOREA</b>

PS01-28	An Analysis of Brand Identity & Color Image on Blog Nam-il Kim (Chung-Ang University, Korea), Seokhyun Lee (Chung-Ang University, Korea)
PS01-29	The Color Analysis on the Case of 〈Dansaekhwa〉 with Koreans' Color Sensibility -Focused on The Art Works of Dansaekhwa in 1970s to 1980s-Dami Hong (Hongik University, Korea), Younjin Lee (Hongik University, Korea)
PS01-30	The Effects of Change in Color Scheme in Street Environment on Emotion of Pedestrians Eunjung Jung (Ewha Womans University, Korea), Gyoungsil Choi (Ewha Womans University, Korea)
PS01-31	Color Effects in Floral Art Forms Arising from Rotary Motions in Kinetic Art Technique Sung-ho Song (Korea University, Korea)
PS01-32	A Study on Nail Designs of Color Application Expressed in Fairy Tales YeonHee Pyo (Kunkuk University, Korea), YeonJa Jung (Kunkuk University, Korea)
PS01-33	Colors of the Public Art in Urban, Based on Seoul's Sculpture YeonHong Son (Ewha Womans University, Korea)
PS01-34	Analysis of color images expressed in the movie 'La La Land' -Focus on the costumes of male and female protagonist- Bora Hong (Wonkwang University, Korea), Sun Ah Kim (Wonkwang University, Korea)
PS01-35	Color Measure in the Fiction of Mo Yan's Red Sorghum Han Dan (Northeast Normal University, China), Hu Ming Hai (Northeast Normal University, China)
PS01-36	A Study on the Tekhelet in the Christian Old Testament Yoona Jeong (Sangmyung University, Korea)
PS01-37	Analysis of Korea Color Research Trend Around Dissertation and Journals (1956–2016) Seong Yun Jeong (Yonsei University, Korea)
PS01-38	History of Color Trend as 'Historical Functionalism': Seeing Color Trend in Modern Aesthetics Chan-hee Chang (KMK Color Institute, Korea)
PS01-39	A Study on Different Category of Pink by Different Languages_Focused on Korean and English Jaehee Heo (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS01-40	Impact of the Korean Wave on Beauty Market Trends in Malaysia Yoomi Kim (University of Malaya, Korea), Loo Pay Lim (Berjaya University College of Hospitality, Malaysia)
PS01-41	Color Suggestion for Each Season for Vitalization of the Sales of Cactus Products SangDuk Lee (Cactus & Succulent Research Institute, Korea), SeungMin Hong (Cactus & Succulent Research Institute, Korea), GeeYoung Lee (Cactus & Succulent Research Institute, Korea), SeungHyun Kim (Sahmyook University, Korea), YooSun Kim (Sahmyook University, Korea)



People

PS01-42	A Study on coloring Changeable Aspect of the latter Period of the Joseon Dynasty JeeSun Lee (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
PS01-43	Study about the Characteristics of Hanji and Wasi through the Analysis of Dye, Extracted from the Peel of an Onion Somi Ko (Sangmyung University, Korea), Sung Hae Kang (Sangmyung University, Korea)
PS01-44	A Study on the Harmony of Traditional Colors according to Difference of Shades EunJi Yoo (Ewha Womans University, Korea), KyuRim Lee (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS01-45	Comparative Investigation into the Appearance of Lapis Lazuli and Royal Blue Elza Tantcheva-Burdge (Independent Scholar, United Kingdom), Vien Cheung (University of Leeds, United Kingdom)
PS01-46	Color research of Korean traditional painting: Starting with ChoSunDynasty Folk painting Ji-hoi Beak (KMK color Institute, Korea), Min-kyoung Kim (KMK color Institute, Korea)
PS01-47	Korean's Association Color of Europe · Asia · North America Eunhye Seo (Ewha Womans University, Korea), Yungkyung Park (Ewha Womans University, Korea)
PS01-48	Analysis the Correlation between Gimhae Festival Poster Color and Urban Color Guidelines MinJi Kim (Inje University, Korea), InKyu Choi (Inje University, Korea), EuiTay Jung (Inje University, Korea)
PS01-49	Study on Color Characteristic of Joseon Court Painting- Focus on Court Jinchansang(進饌床) food decorative painting Sanghwa-concept Sungwoo Choi (Dongguk University, Korea), Gyoungsil Choi (Ewha Woman's University, Korea)
PS01-50	A study on optimum glossiness by lightness of car interior hard-trim parts Jung In Hong (Hyundai Motor Group, Korea), Myoung Suk Kim (Hyundai Motor Group, Korea), Tea Hwan No (Hyundai Motor Group, Korea)
PS01-51	Persona Development as a User-Centred Design Tool for Conveying Colour Information Needs in Design Seahwa Won (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom)
PS01-52	Effect of Blue Color on the Reliability of Korean Low-Cost Airline Websites Suhui Lee (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
PS01-53	Comparative Study on Visual Image Structure of Flower Products between Japanese and Thai

Technology Thanyaburi, Thailand), Mikiko Kawasumi (Meijo University, Japan)

Nana Moriyama (Meijo University, Japan), Kitirochna Rattanakasamsuk (Rajamangala University of

13TH AIC CON	IGRESS
AIC 20	)17
JEJU,	<b>KOREA</b>

	Color of Wooden Floor Ziyu Chen (China Academy Of Art, China)
PS01-55	Study of Harmony for Exterior and Interior Color of A Compact Car Bomi Kim (Ewha Womans University, Korea)
PS01-56	A Study on ISSEY MIYAKE Brand with the Perspective of Cognitive Psychology (Paradigm) Kang Sung Hae (Sangmyung University, Korea), Ji Hye Huh (Sangmyung University, Korea)
PS01-57	2017–2018 Future Consumer and CMF Trend Hyo Jung Kim (Samhwa Paints, Korea), Hyang Ran Kim (Samhwa Paints, Korea)
PS01-58	A Study on the Product Design using Saekdong Pattern as Accent Color Kum-Hee Ryu (Hongik University, Korea)
PS01-59	Visual Assessment of Fashion Images, Based on Persimmon-Dyed Cotton Fabric: Galchon, by Korean and American Observers Eunjou Yi (Jeju National University, Korea), Renzo Shamey (North Carolina State University, USA)
PS01-60	Study on Association of Sweetness by Two-color Combinations in Package Design Jaeryung Park (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS01-61	The Characteristics of Colors and Emotional Color Name of Eye Shadow Products MinKyung Kim (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
PS01-62	A Study on Cosmetic Package Colors for the Silver Generation – Focusing on Wrinkle Treatment Cosmetics – Yelim Kim (Inje University, Korea), Hanna Park (Inje University, Korea), Jinkyung Paik (Inje University, Korea)
PS01-63	Study on the warm-cool sense of the textile material and color Jiyeon Oh (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS01-64	A Study of Color in Packaging Design for Korean Natural and Organic Beauty Products in Relation to Jeju Brand Image Moon Sook Kim (Dongseoul University, Korea)
PS01-65	How Glossiness, Brightness, and Pearliness affect Emotional Images of Achromatic Plastic Products: The Conditional Effects of Product Sizes Jiyoung Kwon (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS01-66	A study on seasonal color characteristics of blue denim materials Sojeong Bang (Ewha Womans University, Korea), Changsoon Kim (Ewha Womans University, Korea)

PSO1-54 From Indoor Background to the Color Expression of Art and Emotion-Study and Practice of the

- PSO1-67 Determination of Preferred Blue Lighting Color by Aesthetic Experiment and EEG Test Seungjae Lee (Samsung Electronics Co., Ltd, Korea), Ji-Hyung Lee (Samsung Electronics Co., Ltd, Korea), Seongkyun Kim (KAIST, Korea), Cheol-Young Kim (Samsung Electronics Co., Ltd, Korea), Keunbum Lee (Samsung Electronics Co., Ltd, Korea), Youngsuk Lee (Samsung Electronics Co., Ltd, Korea), Jaeseung Jeong (KAIST, Korea)
- **PSO1-68** A Study on Visual Openness and Stability of Glass Wall in Work Space Yoo Jin Chung (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
- PSO1-69 Research about the Influence of container Color on the functional image of Cosmetics -based on Industrial Skincare container Color

  Seong-sun Cho (KMK Color Institute, Korea), Min-kyoung Kim (KMK Color Institute, Korea)
- PS01-70 The Color Trend; natural change of color trend Ansoo Lee (Chung-ang University, Korea)
- **PSO1-71** A Study on Volumetric of knit material weave interval Eunjung Kim (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
- PSO1-72 A Study on Color Characteristics of SPA Brands
  Hanna Park (Inje University, Korea), Yelim Kim (Inje University, Korea), Jinkyeong Paik (Inje University, Korea)
- PSO1-73 Color plan of Instagram Application Icon and UI
  Saet Byul Kim (Sahmyook Environmental Green Design Research Institute, Korea), Su Min Kim (Sahmyook University, Korea), Yeon Mi Kim (Sahmyook University, Korea), Chae Eun Han (Sahmyook University, Korea)
- **PSO1-74** Comparison and Analysis of Regional Characteristics and Elements of Floral Design in Seoul and Busan NaYeon Jung (Sahmyook University, Korea), JunYoung Lee (Sahmyook University, Korea)
- **PSO1-75** A Study on Properties of Focal Colors Recognized through KS Basic Color Names Won–Jung Choi (AmorePacific Corporation, Korea), Gyoung–sil Choi (Ewha Womans University, Korea)
- **PSO1-76** A study on the Range of the color to be recognized as a Bluish-green and Greenish-blue Yunjeong Jeong (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
- PSO1-77 A Study on Safety Sign Color Standards in Construction Sites: Comparison between Korea and Other Countries

  Ye-Eun Jang (Ewha Womans University, Korea), June-Seong Yi (Ewha Womans University, Korea), Sungjoo Hwang (Ewha Womans University, Korea), Hyunbin Kang (Ewha Womans University, Korea)
- PSO1-79 Color Congruency between Text and Graphics Improves Reading Fluency and Comprehension Pei-Chen Wang (Chinese Culture University, Taiwan), Tsuei-Ju Hsieh (Chinese Culture University, Taiwan), Da-Lun Tang (Tamkang University, Taiwan)

13TH AIC CONGRESS
<b>AIC 2017</b>
<b>JEJU, KOREA</b>

PS01-80	A Study of Color Laws and Guidelines in Traffic and Road Facilities EunKyung Shin (Ewha Womans University, Korea), GyoungSil Choi (Ewha Womans University, Korea)					
PS01-81	A Study on the Universal Environmental Color Plan for the Color Vision Defectives EunBae Moon (Chungwoon University, Korea)					
PS01-82	A Study on the Exhibition design and Color Image Plan in National Children Museum – Focus on the Buyeo Children's Museum – JungHwa Song (Kaywon University, Korea)					
PS01-84	A study on associative colors and symbols on accessories shown in historical TV dramas –with a focus on 'Jang Ok–Jung, Live in Love.' Minkyoung Kim (Konkuk University, Korea), Yeonja Jung (Konkuk University, Korea)					
PS01-85	A Study on Emotional Color Image Expression of Up-cycling Brand GokMi Kim (Yonam College, Korea)					
PS01-86	Researching the Colors of Cosmetics Package Design, Focusing on Domestic Brands that Export to China Yeonwon Suh (Chung-Ang University, Korea), Seokhyun Lee (Chung-Ang University, Korea)					
PS01-87	Color And Emotioal labor – Study on Hair Salon Worker Yeun-Hee Chang (JUNO Hair, Korea), Jin-Hyun Park (JUNO Hair, Korea)					
PS01-88	A Study on the Local Characteristics Through Colors Expressed Outside the Multi-Famil Housings at New Cities in Gyeonggi Province JinHee Choi (Sangmyung University, Korea)					
Oral Sess	ions					
	& Culture II D / Halla A Hall					
OS04-1	Spectral Image Reconstruction of Chinese Ink and Wash Painting Based on Self-training wit Multispectral Imaging Peng Xu (Zhejiang Univ., China), Jueqin Qiu (Zhejiang Univ., China), Haisong Xu (Zhejiang Univ., China) Zhengnan Ye (Zhejiang Univ., China)					
OS04-2	A Study on Hangul and Obangjeongsaek that appear on Hunminjeongeum EunBae Moon (Chungwoon University, Korea)					
0504-3	Colour Culture: An Introduction					

Johnny Jie Xu (Loughborough University, United Kingdom), Xueqing Zhang (Tongji University, China)

#### **OSO4-4** From White to Magenta

Ana Marija Grancaric (University of Zagreb, Croatia), Martinia Ira Glogar (University of Zagreb, Croatia), Lea Botteri (University of Zagreb, Croatia)

#### OSO4-5 Investigating Cultural Differences In Colour-Word Associations Using Internet Image Search

Yun Chen (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom), Qianqian Pan (University of Leeds, United Kingdom), Luwen Yu (University of Leeds, United Kingdom), Jie Yang (University of Leeds, United Kingdom)

#### OSO4-6 Color and its relation to the female figure in the cinema

Pedro Felipe Pinho Souza (Unicamp, Brazil), Anna Paula Silva Gouveia (Unicamp, Brazil)

#### OSO4-7 Using color-coding method to teach music for children

Yi-Ting Kuo (Jen-Teh Junior College of Medicine, Nursing and Management, Taiwan)

#### OSO4-8 The Pursuit of Perceived Density found in Colors Favored by Japan

Sungmi Oh (Joshibi University of Art and Design, Japan), Hyunjung Kim (Yonsei University, Korea)

#### **OS05: Design & Communication II**

15:10-17:10 / Halla B Hall

#### **OSO5-1,2** (Invited) 2018-2019 Color & Material Trend

Se-Lee Lee (Ewha Womans University, Korea)

#### OSO5-3 Differences in Color Naming between British and American English Speakers

Dimitris Mylonas (University College London, United Kingdom), Lindsay W. MacDonald (University College London, United Kingdom), Lewis D. Griffin (University College London, United Kingdom)

#### **OSO5-4** Gender Differences in Russian Colour Naming

Yulia A. Griber (University of Smolensk, Russia), Galina V. Paramei (Liverpool Hope University, United Kingdom), Dimitris Mylonas (University College London, United Kingdom)

#### **OSO5-5** Colours as Trademarks – Clarification and Limitations

Paul Green-Armytage (Curtin University, Australia)

#### **OSO5-6** Turkish Colour Naming on the Net

Begüm Ulusoy (Atilim University, Turkey), Lewis D. Griffin (University College London, United Kingdom), Dimitris Mylonas (University College London, United Kingdom)

#### **OSO5-7** Combination of Two Colours in Human Vision

Elodie Chandernagor (Art Consultant, Singapore)



OSO5-8 Colour Influence of Input Button on User's Pressing Motivation, Visual Attraction, and Preference

- Analysis Using Paired Comparison

Yoshikazu Mizutani (Kyoto Institute of Technology, Japan), Saori Kitaguchi (Kyoto Institute of

Technology, Japan), Tetsuya Sato (Kyoto Institute of Technology, Japan)

#### **OS06: Environment & Architecture II**

15:10-17:10 / Samda Hall

- OS06-2 Urban Color Expressing the Spirit of the City by Chinese color system Jinghong Wang (China Central Academy of Fine Arts, China) **OSO6-3** Environmental Colour Design: A Survey on Colour in Urbanism and Architecture Verena M Schindler (Independent Scholar, Switzerland) **OSO6-4** Urban Color Assessment Based on Spatial Perceive: A Case Study on Changzhou Xinbei District Jiangbo Wang (Nanjing Technology University, China), Aiping Gou (Shanghai Institute of Technology, China) Can Color be a Bridge of Modern and Tradition —A Practice on Changzhou Xinbei Urban Color Plan **OSO6-5** Aiping Gou (Shanghai Institute of Technology, China), Jiangbo Wang (Nanjing Technology University, China) **OSO6-6** Romanian Urban Collage: Colour-Architecture-Politics Veronica Maria Zybaczynski (Ion Mincu University of Architecture and Urbanism, Romania)
- OSO6-7 Colour Studies in the Urban Environment: Reviews, Summaries and Challenges
  Beichen Yu (The University of Edinburgh, United Kingdom)



#### Scientific Program

Tuesday, 17th October

#### Keynote Speech II

**Keynote Speech II: Jianming Song, China Academy of Art, China Fashion and Color Association** 09:00–10:00 / Halla A Hall

#### **Oral Sessions**

#### OS07: Science & Technology I

10:20-12:20 / Halla A Hall

#### **OSO7-1** Verification of MacAdam Data

Jing Liang (Zhejiang University, China), Ronnier Luo (Zhejiang University, China), Maria Georgoula (University of Leeds, United Kingdom), Nianyu Zou (Dalian Polytechnic University, China)

#### **OSO7–2** A Colour Rendering Index for Dichromats

Brian Funt (Simon Fraser University, Canada), Hamidreza Mirzaei (Simon Fraser University, Canada), Xiandou Zhang (Hangzhou Dianzi University, China)

## OSO7-3 Image quality evaluation based on Sigmoid function by the modified Color Distribution Index (mCDI)

Hou-Chi Chiang (National Chiao-Tung University, Taiwan), Yuan Ouyang (Chang Gung University, Taiwan), Jyun-Wei Jhuang (National Chiao-Tung University, Taiwan), Ting-Wei Huang (National Chiao-Tung University, Taiwan), Yung-Jhe Yan (National Chiao-Tung University, Taiwan), Mang Ou-Yang (National Chiao-Tung University, Taiwan)

#### **OSO7-4** Fast Segmentation-based Tone Mapping Operator

Jakkarin Singnoo (University of the Thai Chamber of Commerce, Thailand)

#### OSO7-5 BRDF Measurement and Color Appearance Simulation based on iccMAX Framework

Wei-Chun Hung (NTUST, Taiwan), Pei-Li Sun (NTUST, Taiwan)

#### OSO7-6 Colour Vision Properties of Surface Colours based on complementary Optimal Colours

Klaus Richter (Berlin University of Technology, Germany)

#### **OSO7-7** A New Uniform Colour Space for Comprehensive Image Applications

Ming Ronnier Luo (Zhejiang University, United Kingdom), Muhammad Safdar (Zhejiang University, Pakistan), Youn Jin Kim (Huawei, China)

## OSO7-8 Preliminary Examination for Colorimetry of Removed & Re-transfused Blood and Skin of Hemo-dialysis Patients

Yuki Akizuki (University of Toyama, Japan), Futoshi Ohyama (Tokai University, Japan), Tomomi Iizuka (Tokai University, Japan), Tomoko Kutsuzawa (Tokai University, Japan)

#### **OS08: Environment & Architecture III**

10:20-12:20 / Halla B Hall

#### **OSO8-1** Teaching Color

Esther Hagenlocher (University of Oregon, USA)

#### OSO8-2 Space | Color | Light - Teaching Color in Interior Architectural Design

Ralf Weber (Dresden University of Technology, Germany)

## OSO8-3 Investigating colour in interior design education: an observational study about colour in the first design stages

Douha Attiah (King Abdulaziz University, Saudi Arabia), Abeer Alawad (King Abdulaziz University, Saudi Arabia), Vien Cheung (University of Leeds, United Kingdom)

## OSO8-4 The Implication of Interpretive Inquiry for Empirical Studies on Color Meaning: A Symbolic Interactionist Approach to Color Perception in Healthcare

Jain Kwon (University of Georgia, USA)

#### OSO8-5 Research about preference of wallpaper in Japan and a Korean girl student

Tomoko Obama (Shizuoka University of Art and Culture, Japan), Nobuhoshi Kanai (Hoseo University, Korea)

#### **OSO8-6** Why is History Related Colour Design so Complicated? The Factors Governing Colour Experience

in a Historical Cityscape

Kati Winterhalter (Aalto University, Finland)

#### OSO8-7 Color Characteristics Analysis for the Color Development of Architectural Color Guide

Min-Gi Kim (KANGNAM JEVISCO CO., LTD, Korea), Joong-Ho Hwang (KANGNAM JEVISCO CO., LTD, Korea), Na-Ra Kim (KANGNAM JEVISCO CO., LTD, Korea), Hyo-Sun Choi (KANGNAM JEVISCO CO., LTD, Korea), You-Jin Choi (KANGNAM JEVISCO CO., LTD, Korea), Eun-Hee Han (KANGNAM JEVISCO CO., LTD, Korea)



### OSO8-8 The Effect of Microorganisms Drench on the Leaf Color of Golf Course Grass -Targeting Jeju Ecoland-

JongHwan Song (GreenBio-Agro Company, Korea), Misuk Lee (GreenBio-Agro Company, Korea), SeongHee Moon (he Won Company, Ecoland Golf and Resort, Dept. of Course Management, Korea), YooSun Kim (Dept. of Environmental GreenDesign&Horticulture, Sahmyook University, Korea), SangEun Shin (Sahmyook Environmental GreenDesign Research Institute, Korea)

OSO9: Color Application 10:20–12:35 / Samda Hall

OSO9-1 Colour Harmony in Clothing, Skin Tones and Hair Colours for Applications of Online Shopping I-Han Liu (National Taiwan University of Science and Technolo, Taiwan), Li-Chen Ou (National Taiwan University of Science and Technolo, Taiwan)

#### OSO9-2 Developing a model for predicting whiteness of human face

Binghao Zhao (University Science and Technology Liaoning, China), Qianqian Pan (University of Leeds, United Kingdom), Zhifeng Wang (University of Science and Technology Liaoning, China), Yang Xu (University of Science and Technology Liaoning, China), Changjun Li (University of Science and Technology Liaoning, China), Stephen Westland (University of Leeds, United Kingdom), Kaida Xiao (University of Leeds, United Kingdom)

## OSO9-3 Development of a Skin Color Evaluation Method Based on Hyperspectral Imaging Using Erythema and Melanin Indices

Mamiko Kikuchi (Kao Corporation, Japan), Takanori Igarashi (Kao Corporation, Japan), Hirayuki Sato (Kao Corporation, Japan), Tsutomu Fujimura (Kao Corporation, Japan)

#### OSO9-4 Investigation of facial attractiveness using a facial image database

Binghao Zhao (University of Science and Technology Liaoning, China), Qianqian Pan (University of Leeds, United Kingdom), Yang Xu (University of Science and Technology Liaoning, China), Zhifeng Wang (University of Science and Technology Liaoning, China), Changjun Li (University of Science and Technology Liaoning, China), Stephen Westland (University of Leeds, United Kingdom), Kaida Xiao (University of Leeds, United Kingdom)

#### **OSO9-5** The Impact of Skin Colour on Facial Impressions

Mengmeng Wang (University of Leeds, United Kingdom), Ming Ronnier Luo (Zhejiang University, China), Kaida Xiao (University of Leeds, United Kingdom)

## OSO9-6 Influence of Knowledge about Clothes and Sensation Modalities on Texture Evaluation of Beige Textile

Jing Liang (Zhejiang University, China), Ronnier Luo (Zhejiang University, China), Maria Georgoula (University of Leeds, United Kingdom), Gui hua Cui (Wenzhou University, China)

OS09-7	The Relationship between the Scenario of Wedding Party and Wear Color
	Hung Ruei-Ju (Tatung University, Taiwan), Sato Tetsuya (Kyoto Institute of Technology, Japan), Lee
	Wen-Yuan (Tatung University, Taiwan)

- OSO9-8 Colour application comparison between luxurious and retail brand's window displays

  Douha Attiah (King Abdulaziz University, Saudi Arabia), Hye-Won Lim (University of Leeds, United Kingdom)
- OSO9-9 Description of The History of Chanel Lipstick Colour Through An Analysis Of Colour Charts
  Helene De Clermont-Gallerande (Chanel PB, France), Nicolas Rolland (Chanel PB, France), Patrick
  Doucet (Chanel PB, France), Julie Deydeir (Chanel, PB, France), Anne Varichon (Culture Couleur, France),
  Barbara Blin-Barrois (Culture Couleur, France)

#### Workshop II

WS02: Korea-China Color Design Trend

13:00-15:00 / Halla A Hall

#### Poster Session II

PS02: Education, Health, Architecture, Application

13:30-15:10 / Lobby, 3F

- **PSO2-O1** Facial Skin Color Variability in Korean Women
  Kyungah Choi (KAIST, Korea), Hyeon-Jeong Suk (KAIST, Korea)
- PSO2-O2 Aura Colours
  Chrysi Fytopoulou (Irida, Greece)
- **PSO2-O3** The Colors of Digital Textbook UI Design Elements for Smart Learning KeunYoung Ahn (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
- **PSO2-O4** Comparison of Brain wave Characteristics consequent on Red Color Stimulus
  Heewon Lee (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)
- PSO2-O5 A Study on the Color Characteristics Applied to Waldorf School Classroom in Healing Views
  Dong Jun Shin (Hongik University, Korea), Joo Yun Kim (Hongik University, Korea)
- PSO2-O6 The Comparison and analysis of the color development on the heavy metal content of the eyeliner products on sale KeeYoung Lee (Woosong College, Korea)



- PSO2-07 Perceived Saturation Difference of Congenital Red-Green Color Vision Deficiencies
  Kota Kanari (Utsunomiya University, Japan), Tomoharu Ishikawa (Utsunomiya University, Japan),
  Miyoshi Ayama (Utsunomiya University, Japan)
- PSO2-08 A Study on Brain Wave Characteristics in Color Stimulus consequent on Personality Type
  Heewon Lee (Chungnam National University, Korea), Jinbock Lee (Chungnam National University, Korea),
  Minsun Kim (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)
- PSO2-09 Age and Wavelength Dependence of Intraocular Straylight

  Nao Tsuchiya (Utsunomiya University, Japan), Tomonori Tashiro (Utsunomiya University, Japan),

  Tomoharu Ishikawa (Utsunomiya University, Japan), Kazuhiko Ohnuma (Chiba University, Japan),

  Miyoshi Ayama (Utsunomiya University, Japan)
- PSO2-10 A study on the mobile instant messaging application for smartphones: Focused on KAKAOTALK Application

  JinYoung Kim (Ewha Womans University, Korea), SeHwa Won (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
- PSO2-11 Comparing brainwave in object color spaces in relation to a level of Stress

  Suenghee Lee (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)

  Korea), Heewon Lee (Chungnam National University, Korea)
- **PSO2-12** Color Recognition of General Hospital Lobby by User Characteristics Inyoung Choi (Inje University, Korea), Heykyung Park (Inje University, Korea)

I-Ping Chen (National Chiao Tung University, Taiwan)

- PSO2-13 Using Color Composition Diagrams as a Medium for Promoting Better-balanced Diet: an App Development Case
  Yao Dai (National Chiao Tung University, China), Yi-Lin Zhuang (National Chiao Tung University, Taiwan), Nan-Ling Yeh (National Chiao Tung University, Taiwan), Jun Pan (National Chiao Tung University, China),
- PSO2-14 A Study on Influence of Color Stimulus on Stress
  Suenghee Lee (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)
  Korea), Heewon Lee (Chungnam National University, Korea)
- **PSO2-15** A Study on the Correlation between depression scale and Preference Color in the 30s and 40s Gyu Rim Park (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
- **PSO2-16** A Plan and Study on the Cultural Complex Design for Communication Hyosik Kim (Sahmyook University, Korea), Jeon DuSoo (Sahmyook University, Korea)
- PSO2-17 A Study on Elderly's Visual Perception Discrimination consequent on Blue Brightness and Distance Seongjoo Park (Chungnam National University, Korea), Jiwon Lee (Chungnam National University, Korea), Jiyoung Park (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)



PS02-18	Preference	of the	Various	Primary	Colors	on	the	Non-	Transparent	Display	and	Transparent
	Display											

Hyeyoung Ha (Ulsan National Institute of Science and Technology, Korea), Youngshin Kwak (Ulsan National Institute of Science and Technology, Korea), Hyosun Kim (Samsung Display Co., Ltd., Korea), Young-jun Seo (Samsung Display Co., Ltd., Korea), Won-Sang Park (Samsung Display Co., Ltd., Korea)

**PSO2-19** Study of the effect of colors change on users of architectural spaces Applied study on patients with mental retardation and autism

Ibrahim Elhady Elaraby (15th May Engineering Institution, Egypt), Reda Hamada Aly (Alazhar University, Egypt)

**PSO2-20** A Study on Adjective Association and Color Combination Image Scale According to Color Perception of the Elderly

Hyun Sun Chung (Hongik University, Korea), Yeawon Kim (Hongik University, Korea)

- PSO2-21 Effects of Color Temperature of Hospital Lighting on the Treatment of Patients

  DongHun Lee (ECOFEEL. co. ltd, Korea), EunJi Seo (ChungNam National University, Korea), JinSook Lee (ChungNam National University, Korea)
- **PSO2–22** Spatial Resolution Affected by Light Scattering in Pseudo– Cataract Observers Wataru Isoi (Ritsumeikan University, Japan), Hiroyuki Shinoda (Ritsumeikan University, Japan)
- PSO2-23 On Visual Balance Phenomena and Regularities of Colored Light Induction Henian Peng (Hunan Institute of Science and Technology, China)
- PSO2-24 Color Universal Design of Tourist Kiosk Screen for Color Vision Deficiency SuJin Han (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
- PSO2-25 A Study on Textile Design Development for Color Environments at Nursing Homes for the Elderly Im-Jung Choi (Kyungsung University, Korea), Sung-Hae Kang (Sangmyung University, Korea)
- **PSO2-26** Colour in healthcare architecture. Analysis of the use of colour in three exemplary cases in the history of modern architecture

Ana Gascón (University of Zaragoza, Spain), Angelica Fernandez- Morales (University of Zaragoza, Spain)

- **PSO2–27** Gender Differences in Physical Responses due to Changes Environmental Color Tones Jiyoung Oh (Inje University, Korea), Heykyung Park (Inje University, Korea)
- **PSO2–28** Fitness Center Environment Color Scheme for Women JungEun Kim (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
- The Study on Preference Tendency to Simplification and Color Arrangement of Architecture Color in Korea and China Commercial Street between Korean and Chinese

  Lu Chen (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)

PS02-31	A study on the relevance of brand color of natural cosmetics brand to brand concept Su Mi Lee (Hongik University, Korea)
PS02-32	A Study on the Image Evaluation of Simplification of Architecture Color in Korean and Chinese Commercial Streets Lu Chen (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)
PS02-33	Exterior Color Design of Social Overhead Capitals (Especially for nuclear power plant) Seongho Choi (KEPCO ENC, Korea)
PS02-34	An Analysis of Influence on Relationships between Visual and Auditory Senses based on the Color Image Scale Junsu Park (Soongsil University, Korea), Juyeon Kim (Soongsil University, Korea)
PS02-35	Optimal Safety Color of Working Garment for Forestry Industry HeeJin Kim (Ewha Womans University, Korea)
PS02-36	A Study on the Correlation Analysis between Color and Shape Seungwon Ryu (Chungnam National University, Korea), Eunji Seo (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)
PS02-37	A Study on Recognition Range of Korea and Traditional Colors  Jung Hyun Kim (Ewha Womans University, Korea), Yung Kyung Park (Ewha Womans University, Korea)
PS02-38	An Analysis of Characteristics for Color Coordination in a Space according to Trend Themes Jinkyung Choi (Soongsil University, Korea), Juyeon Kim (Soongsil University, Korea)
PS02-39	A Study on Color–Emotion by Light Transformation of Space Bokyung Shin (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS02-40	A Comparative Analysis of EEG (Electroencephalogram) Activation according to Media Facade Types Juyeon Kim (Soongsil University, Korea)
PS02-41	Ways to Find the Right Colour for Residential Façades in Russia and Japan: A Comparative Study Yulia A. Griber (University of Smolensk, Russia), Yosuke Yoshizawa (Kisarazu College, Japan)
PS02-42	Assessing on the Perceived Extension According to the Brightness Composition of Space Eunji Han (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)

**PSO2-30** Characteristics of Environmental Color for Korea Public Healthcare Facilities Jiyoung Oh (Inje University, Korea), Heykyung Park (Inje University, Korea)

PS02-43

PS02-49

	Jinkyung Choi (Soongsil University, Korea), Kueesook Suh (Soongsil University, Korea), Juyeon Kim (Soongsil University, Korea)
PS02-44	National Color Interior Color Investigation - Painting Color Interior - Mi Choi (KMK Color Institute, Korea), Min-kyoung Kim (KMK Color Institute, Korea)
PS02-45	Study on the Exterior Color of LH Permanent Rental Apartments Yoonjoo Kang (Ewha Womans University, Korea), Seri Lee (Ewha Womans University, Korea)
PS02-46	Traditional Color in the Residential Area Alley of Aaruhs, Denmark  Junsu Park (Soongsil University, Korea), Kueesook Suh (Soongsil University, Korea), Juyeon Kim (Soongsil University, Korea)
PS02-47	Analysis of the Perception of Color Harmony in Makeup between Beauty College Students and Workers of the Cosmetics Industry Soyoung Jang (Chung-Ang University, Korea)
PS02-48	Digital Colour from the Design Student's Perspective Phil M Henry (University Of Leeds, United Kingdom), Lauren Millwaters (University of Leeds, United Kingdom)

An Analysis of Alley Color in Tongin-dong, Chebu-dong and Nuha-dong in Seochon, Seoul

PSO2-50 A Study on NCS Color Design Learning Module Development Focusing on toning

SangEun Shin (Ewha Womans University, Korea)

Yongjin Bae (Chung–Ang University, Korea), Seokhyun Lee (Chung–Ang University, Korea)

Color Analysis of Tourist Attraction to Promote Ecotourism Focus on Seocheon

- A Study on the Effect of Color Play Program on the Growth of Creativity in Color and Language
  Area Focused on elementary school age –
  Cheolhee Lee (Hongik University, Korea), Yunsun Park (Korea Color Society, Korea)
- PSO2-52 A Study on the Development of NCS Color Design Learning Modules Focusing on Color Design Planning
  Huigyeong Park (Chung-Ang University, Korea), Seokhyun Lee (Chung-Ang University, Korea)
- PSO2-53 The Effects of Color Education on Stress Relief and Emotion in Adolescents Focusing on EEG measurement

  Seoa Lee (Hongik University, Korea)
- **PSO2-54** A Study on the Color Category of Liquid Foundation#21
  Jiyoung Yoon (Konkuk University, Korea), Yeonja Jung (Konkuk University, Korea)

## AIC 2017 JEJU, KOREA

PS02-55	The Korean standardization of the colors of sclera for the artificial eye Yoonjung Kim (Ewha Womans University, Korea), KyungMin Lee (Ewha Womans University, Korea), HyeJung Jang (Yonsei University Health System Severance Hospital, Korea), Jinsook Yoon (Yonsei University Health System Severance Hospital, Korea), YungKyung Park (Ewha Womans University, Korea)
PS02-56	Skin Color Characteristics following Skin Types of Korean Women Sun-Young Kim (MEGACOS, Korea), Han-na Kim (Noroo&Pantone Color Institute, Korea), Young-Ho Kim (MEGACOS, Korea), Jang-Yung Yoo (MEGACOS, Korea), Eun-ji Kim (MEGACOS, Korea), Jae-Min Yoon (MEGACOS, Korea), Dong-Su Lee (MEGACOS, Korea), Lee-Young Kim (MEGACOS, Korea), Yoo-Ji Hwang (MEGACOS, Korea)
PS02-57	Study on the extraction of modern sensibility adjectives according to traditional fabrics NuRi Kim (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS02-58	2016 WINTEX Standard Color Development Sun Ae Jeong (Kaywon University of Art & Design, Korea)
PS02-59	The Language of Color in Fashion Design Wei Li (Tsinghua University, China)
PS02-60	Evaluation of skin color according to relative temperature YooNa Cho (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)
PS02-61	Comparison between the Skin Colors by Face Part and the Colors of Foundations in the Market Hyuna Kim (Hongik University, Korea), Younjin Lee (Hongik University, Korea)
PS02-62	Research of Fashion & Beauty Make-up Color Analysis of Korean Women's Preferences (For women in their 20s and 40s) Min-kyoung Kim (KMK Color Institute, Korea), Aeri-Christina Kim (KMK Color Institute, Korea)
PS02-63	Skin Tone Analysis with the Use of Visual Colorimetry Seungyeon Lee (Ewha Womans University, Korea), GyoungSil Choi (Ewha Womans University, Korea)
PS02-64	A Study on Fashion Color Image of K-pop Girl Group 'Girls Generation' according to the Concept Album and Music Video.  JuYoon Bae (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
PS02-65	Exploring the Applicability of Sky-Blue on Head-Mounted Display (HMD)  Hyosun Kim (Samsung Display, Korea), Young-Jun Seo (Samsung Display, Korea), Won-Sang Park (Samsung Display, Korea)
PS02-67	How Facial Features Help "Personal Color" Diagnoses – Focus on Korean women in their 20's and 30's Haejung Jang (Hongik University, Korea), Younjin Lee (Hongik University, Korea)
PS02-68	Interior Finishing Materials by Component fitting for Interior Design Styles

Jihae Min (Ewha Color Design Research Institute, Korea), Gyoungsil Choi (Ewha Womans University, Korea)



PS02-69	A Study on the Similarity of Image Association in Interior Design of Apartments
	Seungwon Ryu (Chungnam National University, Korea), Eunji Seo (Chungnam National University,
	Korea), Jinsook Lee (Chungnam National University, Korea)

- PSO2-70 Study of Jaunseowon–Munseongsa Shrine Dancheong Coloring Technique Focused on Dancheong Hwi Color Area –
  Heeeun Lee (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
- PSO2-71 Crime Prevention through Environmental Design Certification Criteria and Prior Research Analysis

   With focus on Color

  EunKyoung Lee (Chungnam National University, Korea), JinSook Lee (Chungnam National University, Korea)
- PSO2-72 A Study on Influence of Color on Prevention of Crimes in Underground Parking Space
  EunKyoung Lee (Chungnam National University, Korea), EunJi Seo (Chungnam National University, Korea)
  Korea), JinSook Lee (Chungnam National University, Korea)
- PSO2-73 Survey on the Use of Color and Finishing Materials in the Lobby Space of the History Museum of the Local Governments in Korea
  Kyung Eun Hur (Woosong University), Jin Sang Roh (Woosong University)
- PSO2-74 Analysis of Color Distribution of Concrete Finishing Materials by adding Industrial Waste Suk Pyo Kang (Woosuk University, Korea), Hye Ju Kang (Woosuk University, Korea), Eun Mi Jin (Sijigam Co., Ltd., Korea)
- PSO2-75 Study on the application of a color scheme for the hallway environment in consideration of the spatial function of an elementary school

  Ji Hye Kim (LEOPLE Design Research Institute, Korea)
- PSO2-76 An Interior Color Direction Methods result from Special Exhibition Theme -Case Study of National Museum Korean contemporary History—

  Bo-Mi Han (Chung-Ang University, Korea), Seok-Hyun Lee (Chung-Ang University, Korea)
- PSO2-77 A Study on the Color Planning for Activation of Rural Viliage

  Ji-seon Ryu (Chungnam National University, Korea), Hee-won Lee (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)
- PSO2-78 Navigation Effect of Colored Road Marks for Wayfinding in 3D Environment
  Jun-Kai Niu (Chinese Culture University, Taiwan), Tsuei-Ju Hsieh (Chinese Culture University, Taiwan)
- PSO2-79 A Study on the Application of Living Hanbok Color Scheme Utilizing the Personal Color System (For women in their 20s and 30s)

  Mee-Ran You (KMK color Institute, Korea), Min-Kyoung Kim (KMK color Institute, Korea), Jung-Ran Lee (KMK color Institute, Korea)
- **PSO2-80** Color in Syntax Highlighting on Programmers' Readability Assessment Minsun Hong (KAIST, Korea), Hyeon–Jeong Suk (KAIST, Korea)

## AIC 2017 JEJU, KOREA

PS02-81	A comparison of AMOLED and LCD panel about visual fatigue and visual discomfort Jungmin Han (KAIST, Korea), Yuchun Yan (KAIST, Korea), Seo-Hee Bae (Hansol Eye Clinic, Korea), Hyeon-Jeong Suk (KAIST, Korea)
PS02-82	Optimal Brightness of Head Mounted Display for Virtual Reality Contents Yuchun Yan (KAIST, Korea), Jungmin Han (KAIST, Korea), Hyeon–Jeong Suk (KAIST, Korea)
PS02-83	Analysis on Color-related Education for the Non-design Majors Involved in Collaborative Design Applications in the Field-centered Curriculum Hea Won Kim (Dong Seoul University, Korea)
PS02-84	A Tendency Analysis of Material and Color Characteristics of Modern Architecture Heritage in the Urban Regeneration –Focused on Yongsan hospital complex—Soonchol Eom (Chung-Ang University, Korea), Seokhyun Lee (Chung-Ang University, Korea)
PS02-85	An Analysis Current and Improvement Methods of Landscape Color Guideline in Korea Juhee Kim (Chung-Ang University, Korea), Seokhyun Lee (Chung-Ang University, Korea)
PS02-86	A Study on Color Guidelines for Landscape Planning in Daejeon City Ji-seon Ryu (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)
PS02-87	On the Differences of "+ Color" and "Color +" in Design Thinking Jianming Song (China Academy of Art, China)
PS02-88	A Study on Colors for the Establishment of Corporate – Visual Identity – Focusing on a pot flower farm "HS Flower"  Minhee Hong (Hongik University, Korea), YounJin Lee (Hongik University, Korea)
PS02-89	A Study on the Color Image by Elements of Sustainable Space Design Sooknyung Ha (Sangmyung University, Korea)
PS02-90	A Light Palette: Color Exploration on Equal Luminance Kyeong Ah Jong (KAIST, Korea), Hyeon–Jeong Suk (KAIST, Korea)
PS02-91	Adaptive Illumination for the Home Appliances: A Case Study of Refrigerator Kyeong Ah Jeong (KAIST, Korea), Hyeon-Jeong Suk (KAIST, Korea)

#### 15:10-18:00

Study Group

Study Group I. SGLC (Study Group on Language of Colour): Halla A Hall Study Group II. SGCE (Study Group on Colour Education): Halla B Hall Study Group III. ECD (Study Group on Environmental Colour Design): Samda Hall



#### Scientific Program

Wednesday, 18th October

#### **Oral Sessions**

**OS10: Science & Technology II** 

08:30-10:30 / Halla A Hall

#### OS10-1,2 (Invited) Image Quality Assessment on Mobile Devices

Haisong Xu (Zhejiang University, China)

#### OS10-3 Improving Color Reproduction Accuracy and Color Gamut of Mobile Displays

Eric Kirchner (Color Research, Netherlands), Ivo van der Lans (Color Research, Netherlands), Esther Perales(University of Alicante, Spain), Francisco Martínez-Verdú (University of Alicante, Spain)

#### OS10-4 Rendering Color to Obtain Preferred Image Effects on Wide Gamut Displays

Rui Gong (Xidian University, China), Xiandou Zhang (Hangzhou Dianzi University, China), Qing Wang (Qilu University of Technology, China)

#### OS10-5 How to Extend a Colour Range and Keeping the Logic, Consistency and Accuracy

Per Jutterstrom (NCS Colour AB, Sweden)

#### OS10-6 Camera Color Accuracy Evaluated via Metamer Mismatch Moments

Emitis Roshan (Simon Fraser University, Canada), Brian Funt (Simon Fraser University, Canada), Hamidreza Mirzaei (Simon Fraser University, Canada)

#### OS10-7 Evaluation of Color Difference Based on EEG

Yaowu Liu (Wenzhou University, China), Guihua Cui (Wenzhou University, China), Jinjin Chu (Wenzhou University, China), Xiukai Ruan (Wenzhou University, China), Yaoju Zhang (Wenzhou University, China), Luiluo Jiang (Wenzhou University, China), Changjun Li (Wenzhou University, China), Min Huang (Beijing Institute of Graphic Communication, China), Manuel Melgosa (Universidad de Granada, Spain), Ming Ronnier Luo (University of Leeds, United Kingdom)

#### OS10-8 Study of Chromatic Adaptation via a Memory Colour Matching Method

Qiyan Zhai (State Key Laboratory of Modern Optical Instrumentation, Zhejiang University, Hangzhou, China), Kevin A. G. Smet (ESAT / Light & Lighting Laboratory, KU Leuven, Ghent, Belgium), Peter Hanselaer (ESAT / Light & Lighting Laboratory, KU Leuven, Ghent, Belgium), Ming Ronnier Luo (State Key Laboratory of Modern Optical Instrumentation, Zhejiang University, Hangzhou, China)

## AIC 2017 JEJU, KOREA

OC11.	Environmon	t & Architecture IV	
0211:	Environmen	t & Architecture i	w

09:00-10:30 / Halla B Hall

OS11-1	The	Color	of	Aalto's	White	Walls

Virginia Cartwright (University of Oregon, USA)

## OS11-2 Interior design color harmony experience through adjusted split-complementary color theory application

Joy Jee Yoon Lim (Colour Research Society of Canada, Canada)

#### OS11-3 The Adjustment of Color-Tunable LED Lighting for Residential Applications

Yandan Lin (Fudan University, China), Minchen Wei (The Hong Kong Polytechnic University, Hong Kong), Dandan Hou (Fudan University, China), Zixin Wen (Fudan University, China), Yan Lu (Fudan University, China)

#### OS11-4 The Effect of Microbial Treatment on the Color of Foliage Plant Aglaonema Growing in a Room

with a Small Amount of Light

Yoosun Kim (Sahmyook University, Korea), Sangeun Shin (Sahmyook Environmental GreenDesign Research Institute, Korea)

#### OS11-6 Red on Red

Esther Hagenlocher (University of Oregon, USA), Landry Smith (Landry Smith Architects, USA)

#### OS11-7 The Social Value of Use of Color as a Resource to Give Value to and Redevelop the Environment

Maasimo Caiazzo (IACC-IT, Italy), Jin Hee Lee (IACC-IT, Italy)

#### OS12: Color & Health I

08:30-10:30 / Samda Hall

#### **OS12-1,2** (Invited) Colour in Employment: A New Colour Grading System with Applications in Healthcare

and Visually-Demanding Occupations

John Barbur (City University London, United Kingdom)

#### OS12-3 Investigation of Interface Color Cognition on Health Industrial Websites

Shu-Ping Feng (Kao Yuan University, Taiwan), Hsueh-Fen Lin (Cheng Shiu University, Taiwan)

#### **OS12-4** Color as design elements for healthcare websites

Hye Jeong Park (Iowa State University, USA), Sunghyun Ryoo Kang (Iowa State University, USA)

#### OS12-5 Color vision in normal eyes, diseased eyes and operated eyes

Kazim Hilmi Or (Private Office of Ophthalmology, Turkey)



#### OS12-6 Color Change Analysis for Measuring Capillary Refilling Time

Masayoshi Shinozaki (Chiba University, Japan), Toshiya Nakaguchi (Chiba University, Japan), Takaaki Nakada (Chiba University, Japan), Hideaki Haneishi (Chiba University, Japan), Shigeto Oda (Chiba University, Japan)

#### OS12-7 Does Illumination Affect Mobility of People with Low Vision?

Anukul Radsamrong (Chulalongkorn University, Thailand), Pichayada Katemake (Chulalongkorn University, Thailand), Éric Dinet (Université de Lyon, France), Alain Trémeau (Université de Lyon, France)

#### **OS12-8** Forensic aspect of color: Color perception of eye witnesses

Kazim Hilmi Or (Private Office in Ophthalmology, Turkey)

#### **OS13: Science & Technology III**

10:50-12:35 / Halla A Hall

#### OS13-1,2 (Invited) Melanopsin and Colour Vision

Lindsay MacDonald (University College London, United Kingdom), Garside D. (University College London, United Kingdom), Teuuissen C. (Philips Lighting Research, Eindhoven, Netherlands)

#### **OS13-3** Tetra-chromatic super vision model: what's Peking robin seeing?

Hiroaki Kotera (Kotera Imaging Laboratory, Japan)

#### OS13-4 New Models of Colour Appearance Scales: Saturation, Vividness, Blackness and Whiteness

Yoon Ji Cho (University of Leeds, Yonsei University, Korea), M Ronnier Luo (University of Leeds, Zhejiang University, United Kingdom), Li-Chen Ou (National Taiwan University of Science and Technology, Taiwan), Guihua Cui (Wenzhou University, China), Kwanghoon Sohn (Yonsei University, Korea)

#### OS13-5 Influences on the Observer Variability with Different Viewing Conditions

Min Huang (Beijing Institute of Graphic Communication, China), Ruili He (Beijing Institute of Graphic Communication, China), Chunjie Shi (Beijing Institute of Graphic Communication, China), Yu Liu (Beijing Institute of Graphic Communication, China), Guihua Cui (Wenzhou University, China), Haoxue Liu (Beijing Institute of Graphic Communication, China), Ming Ronnier Luo (University of Leeds, United Kingdom), Manuel MELGOSA (Universidad de Granada, Spain)

## **OS13-6** When are High Dynamic Range Imaging Reproductions Aesthetically Preferable to Colorimetric Accurate Images?

Keith Derek Martin Findlater (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom)

#### **OS13-7** International comparison of ageing effects on color similarity

Nana Itoh (National Institute of Advanced Industrial Science and Technology, Japan), Ken Sagawa (National Institute of Advanced Industrial Science and Technology, Japan)



#### **OS14: Psychology & Education I**

10:50-12:20 / Halla B Hall

- **OS14–1,2** (Invited) The Possibilities and Limitations of the Psycho-behavioral Effects of Color Shin'ya Takahashi (Tokaigakuen University, Japan)
- Factors Affecting Unique Hue Stimuli Selections Using Object Colors

  Renzo Shamey (North Carolina State University, USA), Muhammad Zubair (North Carolina State University, USA), Rolf G Kuehni (North Carolina State University, USA)

### A Cross-Cultural Study of Colour Emotion and Colour Harmony Li-Chen Ou (National Taiwan University of Science and Technology Taiwan

Li-Chen Ou (National Taiwan University of Science and Technology, Taiwan), Yinqiu Yuan (National Taiwan University of Science and Technology, Taiwan), Sato Tetsuya (Kyoto Institute of Technology, Japan), Wen-Yuan Lee (Tatung University, Taiwan), Ferenc Szabó (University of Pannonia, Hungary), Suchitra Sueeprasan (Chulalongkorn University, Thailand), Rafael Huertas (Universidad de Granada, Spain)

- The Effect of Chromatic and Achromatic Color Schemes on Children's Emotions in a Preschool Classroom

  Dalirnaghadeh, D., Nilgün Olguntürk (Bilkent University, Turkey)
- OS14-7 Color, Emotion and Behavioral Intentions in City Hotel Guestrooms Selin Yar, Nilgün Olguntürk (Bilkent University, Turkey)

#### OS15: Color & Health II

10:50-12:20 / Samda Hall

- OS15-1,2 (Invited) Colour for Health: Update on the Latest Developments in Light Therapy Anadi Martel (International Light Association (ILA), Belgium)
- OS15-3 Reading on Tablet: Effect of Background on Visual Fatigue
  Suchitra Sueeprasan (Chulalongkorn University, Thailand), Praewpan Youyen (Chulalongkorn University, Thailand), Tetsuya Sato (Kyoto Institute of Technology, Japan)

## OS15-4 Preliminary study on evaluation of legibility and visual fatigue against luminescent text display based on physiological information

Daiki Saito (Saitama University, Japan), Keiichi Watanuki (Saitama University, Japan), Keiichi Muramatsu (Saitama University, Japan), Kazunori Kaede (Saitama University, Japan), Masutsugu Tasaki (ASAHI RUBBER INC., Japan), Takashi Kanahira (ASAHI RUBBER INC., Japan), Eiji Ishiguro (ASAHI RUBBER INC., Japan), Naoya Mashiko (ASAHI RUBBER INC., Japan)



## OS15-5 Preliminary Study on Estimating Legibility and Visual Fatigue against LED Lightings by Deep Learning of Biological Information

Kenji Tajima (Saitama University, Japan), Tomohiro Nishikawa (Saitama University, Japan), Daiki Saito (Saitama University, Japan), Keiichi Watanuki (Saitama University, Japan), Keiichi Muramatsu (Saitama University, Japan), Kazunori Kaede (Saitama University, Japan), Masutsugu Tasaki (ASAHI RUBBER INC., Japan), Takashi Kanahira (ASAHI RUBBER INC., Japan), Eiji Ishiguro (ASAHI RUBBER INC., Japan), Naoya Mashiko (ASAHI RUBBER INC., Japan)

#### **OS15-6** Impression and Clarity of Bathroom Lighting

Suchitra Sueeprasan (Chulalongkorn University, Thailand), Natchanun Ekpoothor (Chulalongkorn University, Thailand), Roongnapa Sakonkharuehadet (Chulalongkorn University, Thailand), Warisa Ouimak (Chulalongkorn University, Thailand)

#### **General Assembly**

13:00-15:00 / Halla A Hall

#### **Excursion**

15:00-19:00 / Jeju Stone Park

#### Scientific Program

Thursday, 19th October

#### Award Lecture I. 2017 AIC Deane B. Judd Award

#### Ming Ronnier Luo (United Kingdom)

09:00-09:45 / Halla A Hall

#### **Oral Sessions**

#### **OS16: Science & Technology IV**

10:05-12:05 / Halla A Hall

## **OS16-1,2** (Invited) Applications of CIE2015 Cone–Fundamental Based Colorimetry Hirohisa Yaguchi (Chiba University, Japan)

## OS16-3 Comparison of Object-Color and Illuminant Metamerism for Digital Image Color Correction Jueqin Qiu (Zhejiang University, China), Haisong Xu (Zhejiang University, China), Peng Xu (Zhejiang University, China)

#### **OS16-4** Root-Polynomial Color Homography Color Correction

Han Gong (University of East Anglia, United Kingdom), Graham D. Finlayson (University of East Anglia, United Kingdom)

#### **OS16-5** Colour Correction Toolbox

Fufu Fang (University of East Anglia, United Kingdom), Han Gong (University of East Anglia, United Kingdom), Michal Mackiewicz (University of East Anglia, United Kingdom), Graham Finlayson (University of East Anglia, United Kingdom)

#### **OS16-6** Maximum Ignorance Polynomial Colour Correction

Fufu Fang (University of East Anglia, United Kingdom), Graham Finlayson (University of East Anglia, United Kingdom)

#### **OS16-7** Color Transfer for Harmony with a Target Color

Eunjin Kim (KAIST, Korea), Hyeon-Jeong Suk (KAIST, Korea)

#### **OS16-8** Coloured Shadows – Why They Can Be Photographed

Cecilia Sik-Lanyi (University of Pannonia, Hungary), Veronika Szücs (University of Pannonia, Hungary), Robert Hirschler (SENAI/CETIQT, Brazil)

## AIC 2017 JEJU, KOREA

OS17: Color	& Health III
10:05-12:05	/ Halla B Hall

## **OS17-1,2** (Invited) A Modern Approach to Health in Conventional Chinese Color Thought Tien Rein Lee (Chinese Culture University, China)

#### **OS17-3** What are the Colours of Health and Sickness?

Ivar Jung (Linnaeus University, Sweden), Yulia A. Griber (University of Smolensk, Russia), Jeannette Hanenburg (Colour Professionals, Belgium)

#### **OS17-4** The Importance of Colour in Human Life

Edda Mally (IACC, Austria), Jin Hee Lee (IACC, Italy)

#### OS17-5 Consciousness and Preference on Healthcare Color Environment by Generation

Heykyung Park (Inje University, Korea)

#### OS17-6 Colour Profiling - A Blueprint for Health and Wellbeing

Mark Wentworth (Colour for Life, United Kingdom)

#### **OS17-7** Evaluation of the alerting effects of short-wavelength (blue) and broadband wavelength (green)

lights on human during late evening using EEG

Jing Lin (Leeds University, United Kingdom), Stephen Westland (Leeds University, United Kingdom)

#### OS18: Color & Light I

10:05-12:05 / Samda Hall

#### OS18-1,2 (Invited) Regulating Artificial Light at Night for Protecting Health and Sustainability

Jeong-Tai Kim (Kyung Hee University, Korea)

#### OS18-3 Modelling Atmosphere Perceptions of Dynamic Coloured Lightings

Qiyan Zhai (Zhejiang University, China), Bing Li (Zhejiang University, China), J. B. Hutchings (Leeds University, United Kingdom), Fangtian Ying (Zhejiang University, China), Ming Ronnier Luo (Zhejiang University, China; Leeds University, United Kingdom)

#### **OS18-4** Effect of Duv on Color Rendering Properties of Light Sources

Fuzheng Zhang (Zhejiang University, China), Haisong Xu (Zhejiang University, China)

#### OS18-5 Lighting Ambient Effect on Saturation of Durian and Sensation

Supawadee Theerathammakorn (Chulalongkorn University, Thailand), Aran Hansuebsai (Chulalongkorn University, Thailand), Yasushi Hoshino (Tokyo Denki University, Japan)



## OS18-6 Analysis on Color Break-Up Effect of Time-Modulated Full Color LED Lighting during Saccadic Eve Movement

Deok-Weon Song (Yeungnam University, Korea), HyeRan Kang (Yeungnam University, Korea), JeongHun Kim (Yeungnam University, Korea), Ji-Hwan Lee (Yeungnam University, Korea), Chan-Su Lee (Yeungnam University, Korea)

#### **OS18-7** Mutual Illumination and Color Constancy

Pichayda Katemake (Chulalongkorn University, Thailand), Rada Deeb (Université de Lyon, France), Damien Muselet (Université de Lyon, France), Mathieu Hebert (Université de Lyon, France), Alain Tr?meau (Université de Lyon, France)

#### OS18-8 Light on Paper - Study on Origami and Shadows

Sara Antunes Costa (University of Lisbon, Portugal), Mario S. Ming Kong (University of Lisbon, Portugal)

#### Poster Session III

#### PS03: Psychology, Light, Science & Technology

13:30-15:10 / Lobby, 3F

#### PS03-01 Optimal White Point of Television under Varying Illuminants

Taesoo Kim (KAIST, Korea), Kyungah Choi (KAIST, Korea), Yeonhui Ji (KAIST, Korea), Hyeon-Jeong Suk (KAIST, Korea)

#### PS03-02 Ecology Explains Color Preferences in a Non-Industrialized Culture

Agata Groyecka (University of Wroclaw, Poland), Christoph Witzel (Justus-Liebig Universität Gießen, Germany), Marina Butovskaya (Russian Academy of Sciences and Russian State University for the Humanities, Russia), Piotr Sorokowski (University of Wroclaw, Poland)

- **PSO3-O3** The effect of providing specific color information on color preference in the future Na-na Je (Ewha Womans University, Korea), Gyoung-sil Choi (Ewha Womans University, Korea)
- **PSO3-O5** A Study on the Associative Colors and Preferred Colors of Four Seasons According to Regions Ji Young Yoon (Ewha Womans University, Korea), Gyoung-sil Choi (Ewha Womans University, Korea)
- **PSO3-06** A Study on Correlation of Character's Gender, Personality and Color in Children's Animations Woo-Jin Cha (Ewha Womans University, Korea)
- **PSO3-07** Personality Characteristics Relating to Individual Consistency of Color Preference Shinji Nakamura (Nihon Fukushi University, Japan), Shin'ya Takahashi (Tokaigakuen University, Japan)

#### PSO3-08 Psychological Response in Youths to Different LED Colors and Chromas

Ji-Young Park (Chungnam National University, Korea), Kwang-Hyun Choi (Chungnam National University, Korea), Tae-Hwa Shin (Chungnam National University, Korea), Seong-Wook Lim (Chungnam National University, Korea) (Chungnam National University, Korea)



#### PS03-09 Investigation of the Fraser-Wilcox illusion based on photoreceptor stimulations

Wakayo Yamashita (Kagoshima University, Japan), Akiko Matsumoto (Kagoshima University, Japan), Gerald Larkins (Kagoshima University, Japan), Akiyoshi Kitaoka (Ritsumeikan University, Japan), Sei-ichi Tsujimura (Kagoshima University, Japan)

### **PSO3-10** Emotional Responses to Analogous and Complementary Color Combinations of Warm and Cool Colors

Eun Gyeong Shin (Pusan National University, Korea), Ji Min Ha (Pusan National University, Korea), Soobeen Park (Pusan National University, Korea)

## **PSO3-11** Quantitative analysis of subjective color appearance based on color and filter transmittance rates KwangHyun Choi (Chungnam University, Korea), JiYoung Park (Chungnam University, Korea), Ho Lee (Chungnam University, Korea), JinSook Lee (Chungnam University, Korea)

#### **PSO3-12** Effect of Skin Tones on Color Emotion of Lipstick Colors

Semin Oh (UNIST, Korea), Hayeon Jeon (UNIST, Korea), Chaeeun Lee (UNIST, Korea), Arpbai Musaev (UNIST, Korea), Youngshin Kwak (UNIST, Korea)

#### **PS03-13** The Relationship between Colors and Fragrances by Color impression

Tadayuki Wakata (Waseda University, Japan), Miho Saito (Waseda University, Japan)

## **PSO3-14** A Study on Image Quality Preference by Image Brightness and Saturation – a Comparison between Adult Group and Elderly Group

DaEun Park (Ewha Womans University, Korea), YungKyung Park (Ewha Womans University, Korea)

#### PSO3-15 Image of Purple and Orange by Pleasantness Seekers and Comfortableness Seekers

Shin'ya Takahashi (Tokaigakuen University, Japan), Takashi Hanari (Sugiyama Jogakuen University, Japan), Riko Miyake (Tokaigakuen University, Japan)

#### PSO3-16 Color Features of the Waterscape Drawing and Drawer's Mental Image of the Water

Riko Miyake (Tokaigakuen University, Japan), Shin'ya Takahashi (Tokaigakuen University, Japan), Toshio Mori (Gifu Women's University, Japan)

### **PSO3-17** Study on the Application of Nail Coloring According to the Color Preference of Women between 20s and 40s.

Rok Sin (Konkuk University, Korea), Yeon Ja Jung (Konkuk University, Korea)

#### PSO3-18 Possible Influences of Motion and Attention on Color Constancy

Lifang Wan (Graduate School of Engineering, Kochi University of Technology, China), Keizo Shinomori (Vision and Affective Science Integrated Research Lab., School of Information / Research Institute, Kochi University of Technology, Japan)

#### **PSO3-19** Blue Fluorescent Color on Displays

Haeryung Hong (Ewha Womans University, Korea), Yungkung Park (Ewha Womans University, Korea)



## **PSO3-20** Visual Impression of Color Arrangements on a Computer Display Produced by the Colored Light Characterization Method

Kousuke Sugioka (Kyoto University, Japan), Taiichiro Ishida (Kyoto University, Japan)

#### PS03-21 Contrast Impact of Two-Piece Garments

Miyoshi Ayama (Utsunomiya University, Japan), Tomoharu Ishikawa (Utsunomiya University, Japan), Michiru Tagaya (Utsunomiya University, Japan)

#### PSO3-22 The Influence of Character Processing Level on Grapheme- Colored Synesthesia

JuHyun Lee (Dongseo University, Korea), Katsuaki Sakata (Joshibi University of Art and Design, Japan)

## **PS03–23** Personal Color Tone analysis system research development for different face shapes (For women in their 20s and 40s)

Min-Kyoung Kim (KMK color Institute, Korea)

## **PSO3–24** Experiment on the effect of Color Perception on the Sensation felt according to Temperature Change

Jin-Young Baek (Konkuk university, Korea), Ji-Sun Kim (Konkuk university, Korea), Han-Byeol Oh (Konkuk university, Korea), Jae-Hoon Jun (Konkuk university, Korea)

#### PSO3-25 A Study on Healing Colors to Improve Work Environments of Beauty Workers

Yeon-Hee Chang (KMK color Institute, Korea), Min-Kyoung Kim (KMK color Institute, Korea)

### **PSO3-26** A Comparative Study on Sensibility of Light Floor Living Room Space by Color Temperature & Illuminance Characteristic

Dong-Hun Lee (ECOFEEL, ltd, Korea), Jin-Sook Lee (Chungnam National University, Korea), Chan-Ung Jeong (Chungnam National University, Korea)

#### PSO3-28 Study on Effect of Changing RVSI on Colour Appearance

Shinichi Oyama (Graduate School of Science and Technology, Meijo University, Japan), Mikiko Kawasumi (Graduate School of Science and Technology, Meijo University, Japan)

#### **PS03–29** A Study of Meeting Room Spaces Depending on Color Temperature and Illuminance Characteristics

Chan-Ung Jeong (Chungnam National University, Korea), Hy-Eim Song (Chungnam National University, Korea), Byeong-Gwan Lee (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)

#### PS03-30 Power Spectra and Spectral Signatures of Natural Images under Varying Light Illuminations

Juan Ojeda (Researcher, Spain), Juan Luis Nieves (Associate Professor, Spain), Javier Romero (Full Professor, Spain)



#### PS03-31 Color Characteristics of LEDs in Systems of Dynamic Lighting

Anna Savitskaya (National Research University MPEI, Russia), Nikolay Yeliseev (National Research University MPEI, Russia)

### **PSO3–32** A Study of Color Rendering Evaluation Depending on the Color Temperature Characteristics of Automobile Mirror Lamp

Chan-Ung Jeong (Chungnam National University, Korea), Seong-Uk Kim (HYUNDAI-MOTOR, Korea), Jin-Sook Lee (Chungnam National University, Korea)

#### PSO3-33 A Study on Photo-biological Safety Search of LED products with IEC 62471

Kyung-Ho Noh (Korea Testing & Research Institute, Korea), Uh-Chan Ryu (Pukyong National University, Korea)

## **PSO3-34** A Study of Trends in Luminance of Automobile Air Conditioning and Audio Control Color Buttons and Evaluation of Their Performance

Jin-Sook Lee (Chungnam National University, Korea), Nu-Ri Jeon (HYUNDAI MOTOR, Korea), Chan-Ung Jeong (Chungnam National University, Korea)

## **PSO3-35** The Influence of Lighting and Drape on the Appearance of Color and Texture of Glossy and Matt Fabric

Shuilan He (Graduate School of Joshibi University of Art and Design, Japan), Yuki Nakajima (Graduate School of Joshibi University of Art and Design, Japan), Takayoshi Fuchida (Graduate School of Joshibi University of Art and Design, Japan)

## **PSO3-36** Eyesight Characteristics of the Elderly Based on Color Temperature and Illuminance of LED Lighting

Jiyoung Park (Chungnam National University, Korea), Kwanghyun Choi (Chungnam National University, Korea), Chanung Jeong (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)

#### **PSO3-37** Influence of nail color on color appearance for skin color

Yuki Nakajima (Graduate school of Joshibi University of Art and Design, Japan), Shuilan He (Graduate school of Joshibi University of Art and Design, Japan), Takayoshi Fuchida (Graduate school of Joshibi University of Art and Design, Japan)

#### PSO3-38 A Study on Emotional Response Consequent on Successive Contrast of Light Color

Seongjoo Park (Chungnam National University, Korea), Jieun Jang (Chungnam National University, Korea), Chanung Jeong (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)

#### PSO3-39 Simultaneous Color Contrast in White Perception of Complex Scenes

Malgorzata Perz (Philips Lighting Research, Netherlands), Dragan Sekulovski (Philips Lighting Research, Netherlands)



- **PSO3-40** A Study of Sensibility Image of Cafes Depending on Their Interior Lighting and Color Tones Eun-Ji Seo (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)
- PSO3-41 Research on Night Lighting Environment Condition and Improvement Plan of the marine tourism city

  Jungsoon Yang (Paichai University, Korea)
- **PSO3-42** Deduction of Harmonious Color Temperature Ranges of Daylight and LED Lighting EunJi Seo (Chungnam National University, Korea), JinSook Lee (Chungnam National University, Korea)
- Color Appearance of Vegetable according to Color Temperature and TM-30-15 Index
  Chulsoo Yoon (Samsung Electronics, Korea), Jeongrok Oh (Samsung Electronics, Korea), Sungwoo Choi
  (Samsung Electronics, Korea), Jiyoung Park (Chungnam National University, Korea), Kwanghyun Choi
  (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)
- PSO3-45 Study on Color Appearance of Meat Consequent on TM-30 Index
  Jeongrok Oh (Samsung Electronics, Korea), Chulsoo Yoon (Samsung Electronics, Korea), Jeongeun Yun
  (Samsung Electronics, Korea), Jiyoung Park (Chungnam National University, Korea), Kwanghyun Choi
  (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)
- **PSO3-46** Synthesis of Carbon Black Modified and Their Carbon Color Soo Youl Park (KRICT, Korea), Byung Min Lee (KRICT, Korea)
- **PSO3-47** The Investigate of High–Luminance Complex Colorant for LCD Color filter Soo Youl Park (KRICT, Korea), Byung Min Lee (KRICT, Korea)
- PSO3-48 Three-Dimensional Color Prediction Models for Yarn-Dyed Woven Fabrics
  YoungJoo Chae (The Hong Kong Polytechnic University, Hong Kong), Tao Hua (The Hong Kong)
  Polytechnic University, Hong Kong), John H. Xin (The Hong Kong Polytechnic University, Hong Kong)
- PSO3-49 A Perceptual Method to Assess Color in Interfaces
  Cristian Bonanomi (Università degli Studi di Milano, Italy), Matteo Paolo Lanaro (Università degli Studi di Milano, Italy), Alessandro Rizzi (Università degli Studi di Milano, Italy), Barbara Rita Barricelli (Università degli Studi di Milano, Italy)
- PSO3-50 BRDF Correction for Multispectral Imagery of Korea Multi- Purpose Satellite-3A

  Jisoo Hwang (Korea Research Institute of Standards and Science, Korea), Jong-Min Yeom (Korea Aerospace Research Institute, Korea)
- PSO3-51 Improving Color Accuracy of a Low-Cost Color Instrument
  Eric Kirchner (AkzoNobel Performance Coatings, Netherlands), Pim Koeckhoven (AkzoNobel Performance Coatings, Netherlands), Keshav Sivakumar (AkzoNobel Performance Coatings, India)



- PSO3-52 Characterizing the Variations in Skin Colours before and after the Aerobic and Anaerobic Exercises
  Li Jiang (University of Science and Technology Liaoning, China), Cheng Gao (University of Science and
  Technology Liaoning, China), Xiaotong Huang (University of Science and Technology Liaoning, China),
  Boxuan Ren (University of Science and Technology Liaoning, China), Kaida Xiao (University of Science
  and Technology Liaoning, China), Changjun Li (University of Science and Technology Liaoning, China)
- PSO3-53 Colour Synthesizer Source based on Spatially Variable Spectral Filter and Spatial Modulator Dong-Hoon Lee (KRISS, Korea), Seongchong Park (KRISS, Korea), Jaekeun Yoo (KRISS, Korea), Jisoo Hwang (KRISS, Korea)
- PSO3-54 A Study on the Color Appearance of Munsell Color Charts under Various Illuminants
  Wen-Guey Kuo (Chinese Culture University, Taiwan), Chiang Hsiao (Chinese Culture University, Taiwan),
  I-An Lu (Chinese Culture University, Taiwan), Qi-Zhu Hong (Mei Cha Mei Finishing Co. Ltd., Taiwan),
  Tzu-Han Lin (Mei Cha Mei Finishing Co. Ltd., Taiwan), Yi-Wen Zeng (Mei Cha Mei Finishing Co. Ltd.,
  Taiwan)
- **PSO3-55** A Study on Color Reaction based on Physiological Test
  Dong Jun Shin (Hongik University, Korea), Joo Yun Kim (Hongik University, Korea)
- PSO3-56 A Memory Effect in Metallic Material Perception
  Paru Kondo (Chiba University, Japan), Midori Tanaka (Chiba University, Japan), Takahiko Horiuchi (Chiba University, Japan)
- PSO3-57 Changes of Pupil Size during Colored Texture Observation
  Ryusuke Arai (Chiba University, Japan), Midori Tanaka (Chiba University, Japan), Takahiko Horiuchi
  (Chiba University, Japan)
- PSO3-58 Contribution of ipRGC to the Fluorescent Feeling
  Yuki Tanaka (Chiba University, Japan), Keita Hirai (Chiba University, Japan), Midori Tanaka (Chiba University, Japan), Takahiko Horiuchi (Chiba University, Japan), Katsunori Okajima (Yokohama National University, Japan)
- PSO3-59 Investigation of Optimal Green Primary Color in Ultra Wide Color Gamut Display
  Yusuke Inuzuka (Utsunomiya University, Japan), Akihisa Kumakura (Utsunomiya University, Japan),
  Tomoharu Ishikawa (Utsunomiya University, Japan), Miyoshi Ayama (Utsunomiya University, Japan)
- PSO3-60 Evaluation of colour variation of grey scales with the viewing angle

  Berta Bernad (CSIC, Spain), Alejandro Ferrero (CSIC, Spain), Joaquin Campos (CSIC, Spain), Nöel Richard

  (University of Poitiers, France), Christine Fernández-Maloigneb (University of Poitiers, France), Manuel

  Melgosa (University of Granada, Spain)



#### **PSO3-61** Spectral and Color Characterization of a Quantum Dots Display

Khalil Huraibat (University of Alicante, Spain), Eric Kirchner (AkzoNobel Performance Coatings, Netherlands), Ivo van der Lans (AkzoNobel Performance Coatings, Netherlands), Alejandro Ferrero (Consejo Superior de Investigaciones Científicas (CSIC), Spain), Joaquin Campos (Consejo Superior de Investigaciones Científicas (CSIC), Spain), Francisco Miguel MArtínez-Verdú (University of Alicante, Spain), Esther Perales (University of Alicante, Spain)

## **PSO3-62** The Effect of Microbial Treatment in a Room with Significantly Lower Light Intensity on the Color of Indoor Foliage Plant

YooSun Kim (Sahmyook University, Korea), SangEun Shin (Sahmyook Environmental GreenDesign Research Institute, Korea), KiYoung Park (National Institute of Horticultural and Herbal Science, Korea)

## **PS03-63** Neurophysiological Approach to the Effect of Color Scheme and Light – Focused on PB Color with Short Wavelength

JiMin Ha (Pusan National University, Korea), EunGyeong Shin (Pusan National University, Korea), SooBeen Park (Pusan National University, Korea)

## Perceivable luminance resolution for designing optimum display gamma in dark room condition Eunjung Lee (Samsung Display, Korea), Suyoung Kim (Samsung Display, Korea), Jongho Chong (Samsung Display, Korea), Unbyoll Ko (Samsung Display, Korea), Seungbae Lee (Samsung Display, Korea), Hyeyong Chu (Samsung Display, Korea), Sungchul Kim (Samsung Display, Korea)

## **PSO3-65** The Effect of Microbial Treatment on the Color of Foliage Plant Aglaonema Growing in a Room with a Small Amount of Light

YooSun Kim (Sahmyook University, Korea), SangEun Shin (Sahmyook University, Korea), HyoJeong Lee (Sahmyook Environmental GreenDesign Research Institute, Korea), SeougHyun Kim (Sahmyook University, Korea), YooJin Kim (Sahmyook University, Korea), YoonYoung Kim (Sahmyook University, Korea)

#### PS03-66 Salient and Relevant Colors in Digital Images of Paintings

Juan Luis Nieves (Univ. Granada, Spain), Luis Gomez-Robledo (Univ. Granada, Spain), Javier Romero (Univ. Granada, Spain)

#### **PSO3-67** A Study on Volumetric of Stripe Patterns on Space and Cube

Kyungmin Lee (Ewha Womans University, Korea), Yungkyung Park (Ewha Womans University, Korea)

#### PS03-68 Towards a comprehensive comparison among recent colour-difference formulae

Adrián Fernández (Universidad Complutense de Madrid, Spain), Alejandro Ferrero (CSIC, Spain), Manuel Melgosa (Departamento de Óptica, Universidad de Granada, Granada, Spain)

#### **PSO3-70** Conspicuity of Facial Pigmentation Influenced by Its Distribution

Chisako Otsuka (Graduate School of Science and Engineering, Chiba University, Japan), Yoko Mizokami (Graduate School of Science and Engineering, Chiba University, Japan), Kumiko Kikuchi (Shiseido Global Innovation Center, Japan), Hirohisa Yaguchi (Chiba University, Japan)



#### **PS03-71** What Factors Mediate Individual Differences in Color Matching?

Atsushi Konno (Yamagata University, Japan), Kunihiro Hatakeyama (Yamagata University, Japan), Yuki Kawashima (Yamagata University, Japan), Tomonori Tashiro (Yamagata University, Japan), Takehiro Nagai (Yamagata University, Japan), Yasuki Yamauchi (Yamagata University, Japan)

#### **PSO3-73** Color Design Research

Lev Vozchikov (Independent, USA)

#### PS03-74 Discrimination Thresholds for Skin Image and Uniform Color Stimulus

Kazuki Hamada (Chiba University, Japan), Yoko Mizokami (Chiba University, Japan), Kumiko Kikuchi (Shiseido Global Innovation Center, Japan), Hirohisa Yaguchi (Chiba University, Japan)

#### PS03-75 Gloss Estimation of Medium and High-gloss Specimens Using a Digital Camera

Farnam Kavehei (AmirKabir University of Technology, Iran), Saeideh Gorji Kandi (AmirKabir University of Technology, Iran)

#### **PSO3-76** Analysis of Color Image of City Identity and Application Icon – Focusing on Domestic City Halls

Woo Ram Shin (Hongik University, Korea), Youn Jin Lee (Hongik University, Korea)

#### PSO3-77 HDR Spectral Video System Using CMY-ND Filter

Yuki Onishi (Chiba University, Japan), Yoshitsugu Manabe (Chiba University, Japan), Noriko Yata (Chiba University, Japan)

### PSO3-78 A Study on Color Preference According to Personality Type – Focusing on People in their 20s

and 30s

Yea Won Kim (Hongik University, Korea), Hyun Sun Chung (Hongik University, Korea)

#### PSO3-79 Analysis of Trends and Characteristics of Domestic Nightscape Planing – With focus on 17

Regional Local Government -

Seong Hui Kim (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea)

#### PS03-80 Comparison of Color Emotions in Physical Space and Virtual Space

Wonyoung Jeong (Chungnam National University, Korea), Jiyoung Park (Chungnam National University, Korea), Jin-Sook Lee (Chungnam National University, Korea), Eunji Seo (Chungnam National University, Korea)

#### **PS03-81** Senior Guideline for Smartphone Contents Based on Color

Yoonjung Kim (Ewha Womans University, Korea), YounJin Lee (Hongik University, Korea), YungKyung Park (Ewha Womans University, Korea)

### **PSO3–82** Determination of chromium in water by using digital imaging and considering the Con Kries Chromatic adaptation in RGB and HSV Color Spaces

Mohsen Panjeali (Amirkabir University of Technology, Iran), Saeideh Gorji Kandi (Amirkabir University of Technology, Iran), Farhad Panahi (Amirkabir University of Technology, Iran)



#### PS03-83 The dependency of color constancy of a paint film to the initial paints

Bita Fotovvat (AmirKabir University of Technology, Iran), Saeideh Gorji Kandi (AmirKabir University of Technology, Iran)

#### PS03-84 Basic Research on Responsive Webpage consequent on IT Device

Eunkyung Kim (Chungnam National University, Korea), Eunji Seo (Chungnam National University, Korea), Jinsook Lee (Chungnam National University, Korea)

#### PS03-85 Coloration of Textile Care Symbols Applying Color Images

Masashi Kobayashi (Osaka Shoin Women's University, Japan), Yuko Mori (Osaka Shoin Women's University, Japan), Ikuko Okamoto (Osaka Kyoiku University, Japan)

#### PSO3-86 Image-Color Harmony: Insights from Design Practice

Eunjin Kim (KAIST, Korea), Hyeon-Jeong Suk (KAIST, Korea)

#### **Oral Sessions**

#### OS19: Science & Technology V

15:10-17:10 / Halla A Hall

#### OS19-1 The Importance of Lightness in Perceived Color Difference of Black Yarns

Razieh Jafari (Institute for Color Science and Technology, Iran), Mahdi Safi (Institute for Color Science and Technology, Iran)

#### OS19-2 Color Measurement and Image Simulation of Dyes and Pigments Aged by Sunlight

Atsushi Moriwaki (Yokohama National University, Japan), Katsunori Okajima (Yokohama National University, Japan)

#### **OS19-3** Cosmetic Surgery Simulations-based Preference Study

Muhammad Farhan Mughal (Zhejiang University, China), Mengmeng Wang (University of Leeds, United Kingdom), Ming Ronnier Luo (Zhejiang University, China; University of Leeds, United Kingdom)

## OS19-4 Analysis of Relationship between Hair Colors and Personalities of Character Illustrations and Its Application

Motonori Doi (Osaka Electro-Communication University, Japan), Hideki Sakai (Osaka City University, Japan), Masashi Komori (Osaka Electro-Communication University, Japan)

#### OS19-5 Matching Reference Colours in 3D Reproduction of Fine-art Paintings

Lindsay MacDonald (University College London, United Kingdom), Mike Jackson (Arius Technology Inc, Canada)

#### OS19-6 Image Clarity-New Technology to Perfect Optical Properties of Surfaces

Hideo Kita (Suga test instruments Co., Ltd., Japan), Shigeo Suga (Suga test instruments Co., Ltd., Japan), Satoshi Tanaka (Suga test instruments Co., Ltd., Japan), Jack A. Ladson (Color Science Consultancy, USA)

<b>OS20:</b>	<b>Psyc</b>	holo	gy &	Educa	tion II

15:10-17:10 / Halla B Hall

OS20-1	Description of Three-Color (	Combination	Preferences,	their	Reasons,	and	Features:	То	Create a
	Visual Color Design Aid								

Kiwamu Maki (Jissen Women's University, Japan)

### OS20-2 Assessing the Performance of Quest Algorithms in Visual Experiments for Blur Discrimination Thresholds

Yue Yuan(Beijing Institute of Technology, China), Qingmei Huang (Beijing Institute of Technology, China), Yanli Jiang (Beijing Institute of Technology, China)

## OS20-3 Color Teaching aids in Chinese contemporary institutions: Design, production and promotion Yuhang Jing (China Academy of Art, China)

## OS20-4 Gray Color Sensibility Image and Preference in Textile YuJin Choi (Hongik University, Korea), YounJin Lee (Hongik University, Korea)

#### **OS20-5** Knowing the City Through the Game of Color

Samira Kadamani (University of Los Andes, Colombia), Sebastian Camilo Cabal (University of Los Andes, Colombia)

## OS20-6 Influence to Visual Attractiveness of 3 x 3 Entire Pattern by Positions of Two Colored Panels Keizo Shinomori (Kochi University of Technology, Japan), Ryota Nakaya (Kochi University of Technology, Japan), Ippei Negishi (Kanazawa Institute of Technology, Japan)

## OS20-7 The Country of Appearances: A Cultural History of Fashion and Textile Design through Colour in Mexico – 1877 to 1927 –

Nallely Rangel (Universidad Nacional Aut?noma de México, México)

#### **OS21: Color & Light II**

14:55-17:10 / Samda Hall

## OS21-1,2 (Invited) CIE Research Strategy – Future of Color Quality Metrics for Lighting Yoshi Ohno (National Institute of Standards and Technology, USA)

#### OS21-3 Phosphor-Converted Light-Emitting Diodes of Preferential Color Properties

Akvilé Zabiliūté–Karaliūné (Vilnius University Institute of Applied Research, Lithuania), Henrikas Dapkus (Vilnius University Institute of Applied Research, Lithuania), Pranciškus Vitta (Vilnius University Institute of Applied Research, Lithuania), Andrius Petrulis (Vilnius University Institute of Applied Research, Lithuania), Artūras Žūkauskas (Vilnius University Institute of Applied Research, Lithuania)



- The Modeling of the comfort for LED Interior Lighting Based on The Chromaticity Coordinates
  Qing Wang (Qilu University of Technology, China), Haisong Xu (Zhejiang University, China), Rui Gong
  (Xidian University, China), Fenghua Li (Shandong University of Art and Design, China)
- IoT & Python based Measurement and Analysis of Lighting Color temperature and Illuminance for Human-centric Lighting Control
  Youjin Kim (ETRI, Korea), Hyunseok Kim (ETRI, Korea), Jihun Jeon (ETRI, Korea), Tae Gyu Kang (ETRI, Korea)
- OS21-6 How the Colour Fidelity and Gamut of Lightings Affect the Preference of Paintings?

  Qiyan Zhai (Zhejiang University, China), Ming Ronnier Luo (Zhejiang University, China; Leeds University, United Kingdom), Ching–Ju Chou (National Taiwan University of Science and Technology, Taiwan), Hung–Shing Chen (National Taiwan University of Science and Technology, Taiwan)
- Chromatic and spectral quality of lighting for self-dependent elderly people well-being: a case study

  Maurizio Rossi (Politecnico di Milano, Italy), Daria Casciani (Politecnico di Milano, Italy), Fulvio Musante (Politecnico di Milano, Italy)
- OS21-8 Effect of Illuminance and Colour of Light Source on Assessing Tooth Whiteness
  Qianqian Pan (University of Leeds, United Kingdom), Stephen Westland (University of Leeds, United Kingdom)
- Preferable lighting conditions for migraineurs and non-migraineurs in working spaces

  Akari Kagimoto (Yokohama National University, Japan), Katsunori Okajima (Yokohama National University, Japan), Shino Okuda (Doshisha Women's College of Liberal Arts, Japan), Muneto Tatsumoto (Dokkyo Medical University, Japan), Koichi Hirata (Dokkyo Medical University, Japan)

#### **Official Congress Banquet**

18:00-21:00 / Cliff Garden, Hyatt Regency Jeju



#### Scientific Program

Friday, 20th October

#### Award Lecture II. 2017 AIC Colour Award in Art, Design and Environment

Awardee: Antal Nemcsics (Hungary)

09:00-09:45 / Halla A Hall

#### **Oral Sessions**

**OS22: Science & Technology VI** 

10:05-12:05 / Halla A Hall

#### **OS22-1** Evaluation of Whiteness Formulas for FWA and Non-FWA Whites

Yuzhao Wang (The Hong Kong Polytechnic University, Hong Kong; Zhejiang University, China), Minchen Wei (The Hong Kong Polytechnic University, Hong Kong), Shining Ma (The Hong Kong Polytechnic University, Hong Kong), Ming Ronnier Luo (Zhejiang University, China; University of Leeds, United Kingdom)

#### OS22-2 Characterization of Whiteness Appearance for FWA-enhanced White

Ming Ronnier Luo (Zhejiang University, China; University of Leeds, United Kingdom), Yuzhao Wang (Zhejiang University, China; The Hong Kong Polytechnic University, China), Shining Ma (Zhejiang University, China), Minchen Wei (The Hong Kong Polytechnic University, China)

## OS22-3 Application of Colour Histogram of Feature Segmentation to Modelling of Glints in Metallic Coatings

Min-Ho Jung (Leeds University, United Kingdom), Vien Chung (Leeds University, United Kingdom), Peter A Rhodes (Leeds University, United Kingdom)

#### **OS22-4** Investigation of the Simultaneous Colour Contrast Effect

Yuechen Zhu (Zhejiang University, China), Qiyan Zhai (Zhejiang University, China), Ming Ronnier Luo (Zhejiang University, China; Leeds University, United Kingdom)

## OS22-5 Investigation of Flop Index by Variation in Size of Aluminum Flake and its Relation with the Surface Texture Quantified by Edge Frequency Method

Sakineh Amookht (AmirKabir University of Technology, Iran), Saeideh Gorji Kandi (AmirKabir University of Technology, Iran)

#### OS22-6 Perception of Metallic Materials by Projecting Solid Color on Nonmetallic Materials

Midori Tanaka (Chiba University, Japan), Takahiko Horiuchi (Chiba University, Japan)



Multi-angle Reflectance Setup (MARS) for Characterizing Goniochromatic Materials and Sparkle Nina Basic (METAS, Switzerland), Florian Stuker (METAS, Switzerland), Peter Blattner (METAS, Switzerland)

#### **OS22-8** Comparison on 1/1 Standard Color Depth of Three Main Standards

Hongying Yang (Zhongyuan University of Technology, China), Zhihui Yang (Zhongyuan University of Technology, China), Wanzi Xie (Zhongyuan University of Technology, China), Jingjing Zhang (Zhongyuan University of Technology, China) (Zhongyuan University of Technology, China)

#### **OS23: Psychology & Education III**

10:05-12:05 / Halla B Hall

- Towards Industrial and Academic Standards to Promote and Attest Color Knowledge
  Tien-Ren Lee (Chinese Culture University, Taiwan), Wang-I Chen (Industrial Technology Research
  Institute, Taiwan), Pei-Li Sun (Taiwan University of Science and Technology, Taiwan), Tsuei-Ju Hsieh
  (Chinese Culture University, Taiwan)
- OS23-2 Overview of Colour Education in Brazilian Universities: a Focus on Design Courses in the State of São Paulo
  Paula Csillag (ESPM, Brazil), Ana Lucia Lupinacci (ESPM, Brazil), Robert Hirschler (SENAI/CETIQT, Brazil)
- OS23-3 Chromology: Transdisciplinary Proposal of a New Science of Color Born from Pedagogical Experiences
  Manyé Pablo (Universidade Regional do Cariri-URCA, and Universidade de São Paulo-USP, Brazil)
- OS23-6 Mindfulness Zen meditation makes less cognitive conflict in the prefrontal brain under the Stroop color interference

Naoyuki Osaka(Kyoto University, Japan, Osaka University & Neural Networks (CiNet), Japan), Takehiro Minamoto(Osaka University & Neural Networks (CiNet), Japan), Ken Yaoi(Kyoto University, Japan), Miyuki Azuma(Osaka University & Neural Networks (CiNet), Japan), Mariko(Osaka University & Neural Networks (CiNet), Japan)

#### OS24: Color & Health IV

10:05-12:05 / Samda Hall

- **OS24–1** Application of Sumac With Natural Pigments in Producing Essential Oils Color and Protection of Foods Forouzandeh Ghasemi (Alzahra University, Iran)
- OS24–3 Association Analysis of Tongue Color Spatial Distribution and Physiological Index based on Tongue Shape Normalization

Kazunari Murai (Chiba University, Japan), Toshiya Nakaguchi (Chiba University, Japan), Akira Morita (Chiba University, Japan), Takao Namiki (Chiba University, Japan)



#### **OS24-4** Evaluation of Color Conversion Accuracy using Tongue Color Chart

Yudai Ota (Chiba University, Japan), Toshiya Nakaguchi (Chiba University, Japan), Masami Shishikura (DIC Corporation, Japan), Koichi Sakaue (Takano Co., Ltd., Japan), Akira Morita (Chiba University, Japan), Tadaaki Kawanabe (Kitasato University, Japan), Takao Namiki (Chiba University, Japan), Yoichi Miyake (Tokyo Polytechnic University, Japan)

- OS24–5 Improving Intraoperative Color Appearance of Organ using Spectrally Tunable Light Source Yoko Kurabuchi (Chiba University, Japan), Takashi Ohnishi (Chiba University, Japan), Toshiya Nakaguchi (Chiba University, Japan), Hideaki Haneishi (Chiba University, Japan)
- OS24-6 Iris of Fashion: Method to Create an Identity in Fashion Design
  Nallely Rangel (MOSEUA, Colour Laboratory for Costume, Fashion and Textile, México)

#### **Closing Ceremony**

12:10-12:40 / Tamra A Hall

# **KEYNOTE SPEECH**



#### Keynote Speech I



10:50-12:30 on October 16 (Mon) at Tamna A, 5F

## Suro Hwang President, Korean Royal Silk Flower Institute, Korea

Hwang Su-ro was greatly influenced by his maternal grandfather(Lee Su-chang) who served as an executive secretary of Gungnaebu in the late Josun Dynasty (Emperor Gojong) and has devoted her life to studying its court rituals and grandeur that faded into history for over 60 years.

Due to the oppressive Japanese policy to destruct Korean culture, the brilliant rituals and grandeur arts of Josun Dynasty and many royal painters were

sacrificed, and the grandeur arts in Josun Dynasty perished, with the historic records of the royal rituals left only as records in history.

Hwang Su-ro was nominated as a Korea national important intangible cultural heritage No.124 royal painter in 2010 by Cultural Heritage Administration for his services(eg. several research papers, five research works, scores of domestic and foreign large displays of work and world forum presentations, etc.) to restore and reproduce the rituals and grandeur art of Josun Dynasty's culture, and is currently working as a tenured chair-professor of Buddhist Culture Art College at Dongguk University and a director of Korea Flower Museum.

Josun Dynasty's royal painting works reproduced by Hwang Su-ro are housed in U.S.A Cleveland Museum, National Museum of Korea, National Palace Museum of Korea, National Gukak Center, Busan Museum of Art, etc.

In order to permanently preserve Josun Dynasty's royal painting works and historical records restored and produced throughout her life and pass down the works restored after over 200 years through future generations, Hwang Su-jong is building "Korea Flower Museum" investing all of her private fortune. It is opening to the public on or about March, 2018, and a museum, an exhibit hall, and an art hall are being built. (Korea Flower Museum) is a unique Korean traditional craft museum in the world as a flower museum. I wish that Korea's royal grandeur arts would contribute powerfully to our people's cultures and arts.



#### The Korea Royal Silk Flower

Suro Hwang Important Intangible Cultural Properties number 124 Korean Royal Silk Flower Institute

Korean Silk Flower raised by human is more beautiful than the flower of nature. Korean silk flower is a mysterious flower with incoming bee, butterfly, and grass insects.

Because it is the flower of spirit raised by god and human.

However, there are no the existing relics because Korea suffers many misfortunes of cry. For 60 years, I have devoted my whole life solely to the restoration of Korean silk flower remaining as a literature. The restoration of Korean silk flower was possible because it is the vast archival cultural heritage of the Joseon Dynasty.

"Annals of the Joseon Dynasty" and "The Royal Protocols of the Joseon Dynasty", which are Korean national treasure number 151 designated as 1997 "National archival cultural heritage", are the basis of restoration of silk flowers.

The vast literatures above are valuable cultural heritage of our people with all formalities of Joseon Dynasty recorded minutely with text and picture.

I am thankful to the great ancestors for restoring "Korean Cultural Heritage" which existed only in history for over 500 years.



#### Keynote Speech II



09:00-10:00 on October 17 (Tue) at Halla A, 3F

#### **Jianming Song**

China Academy of Art, China Fashion and Color Association, China

Brief biography of Jianming Song

Jiaming Song received Certificat de Troisième Degre Recherche from Ecole Nationale Supérieure des Arts Decoratifs, Pairis, Frane, in 1992. He was head of Fashion & Textile Department, China Academy of Art from 1996 to 2000 and Vice-President, China Academy of Art from 2001. His current research interests include color, design, and color culture. He has published nearly 150 academic

papers on color, 5 books and many projects on color. Main Design Projects are Culture & Innovation Industry Fair, West Lake International Expo, Hangzhou and Color of Macao City(Exhibition), Macao. He is China National Leading Communicator & Expert on Color Theo and Member of China Artists Association and Member of European Color Association and Vice-Chairman of Policy Decision Advisory Committee Hangzhou Municipal Government. His other academic duties include the vice president of the China Fashion & Color Association (CFCA).

## AWARD LECTURE

#### Award Lecture I. 2017 AIC Deane B. Judd Award



09:00-09:45 on October 19 (Thu) at Halla A, 3F

## Ming Ronnier Luo College of Optical Science and Engineering, Zhejiang University, China

Ming Ronnier Luo is a professor at three universities. He is also the CIE Vice-President of Publication. He received his PhD in 1986 at the University of Bradford in the field of colour science. He has published over 580 publications in the areas of colour science, imaging science and LED illumination. He is a Fellow of the Society for Imaging Science and Technology (IS&T), and the Society of Dyers and Colourists (SDC). He has received numerous research awards. He

particularly enjoys teaching to disseminate the state of the art technology in colour, imaging and illumination science all over the world.

#### Holy-grail of colour science

Ming Ronnier Luo\* College of Optical Science and Engineering, Zhejiang University, China

\*m.r.luo@leeds.ac.uk

The holy-grail of colour science is a comprehensive colorimetry system. It includes three main components, a uniform colour space, a model of colour vision and a wide range of perceived attributes for the tasks of colour difference evaluation, colour appearance prediction and colour specification, respectively. In this talk, a review of the development of each component will be first introduced and the practical examples will be given in the application in the colour, imaging and illumination industries. The most rewarding experience is the accumulation of high quality visual data, which will then be used to develop visual model.

#### Award Lecture II. 2017 AIC Colour Award in Art, Design and Environment



09:00-09:45 on October 20 (Fri) at Halla A, 3F

#### **Antal Nemcsics**

Painter, Environment designer, Color researcher, Professor Emeritus of Technical University of Budapest, Hungary

Antal Nemcsics has chosen colours as the subject of all the three fields that he cultivates, i.e. art, science and university education. It is the phenomenon created

by the radiating energy that fills up the universe, while entering our eyes. He applied his artistic and scientific accomplishments in his work as a teacher. His book titled Colour Dynamics, containing a summary of his findings, was published in Budapest, Zurich, London, Berlin, Göttingen, New York, Toronto, Tokyo, Sydney and Singapore. It is used as a textbook in many universities of the world.

#### Interaction of Art and Science in Colour Environment Design

Antal Nemcsics\*

Painter, Environment designer, Color researcher, Professor Emeritus of Technical University of Budapest, Hungary

The organic interrelations between the artistic intuitions of an artist and the research results of a scientist can be demonstrated by a realized concrete instance showing the colour design process of the Castle District of Buda, being part of the World Heritage. The Castle District of Buda has been chosen because it has provided the possibility to integrate the results of different scientific surveys into the process of planning. I have found it is only possible if the designed colours are unambiguously defined in a colour system For this purpose the Coloroid Colour System has proven as the most appropriate one. The process of planning consisted of four stages. In the following I will introduce more detailed the second one, called "colour delimitation" built on scientific results and the third one called "colour selection" which is mainly the result of the artistic intuitions of the designer. During the planning phase I have laid down first the targeted visual conception of the whole Castle District of Buda. Then I have dealt with the definition of facade colours of each building. Colour delimitation provided the possibility to learn what intervals of colour hue (A), saturation (t) and brightness (V) intervals should suggest Coloroid for the different aspects as the dimensions of the building, its architectural articulation, its function, its orientation, relation to its neighbours, its wall surfaces, its sections, its doors and windows and other elements. In the following step I have looked for harmonic colour compositions from the colours of delimited colour ranges, for my envisaged visual conception. This procedure has been facilitated by the Coloroid colour system because its aesthetic uniformity built on harmony thresholds enables simple creation of colour harmony compositions. Then, taking into account the different harmony scales of individual facades I defined the harmony system of actual lines of facades. As the last step, I have selected colours from the harmonic colour compositions being suggested for the individual facades, for the different elements of the facade, for the wall, the section, the plinth, the window-frame etc. The completed design can be observed at the permanent exhibition of my life-work. The place of the exhibition: Hungary, the town of Pápa, Esterházy Palace, Main Square 1. My realized environmental designs and other works are on view at my homepage: www.nemcsicsantal.papa.hu

<sup>\*</sup>nemcsics.akos@kvk.uni-obuda.hu

## INVITED LECTURE





08:30-10:30 on October 16 (Mon) at Halla B, 3F

Hyeon-Jeong Suk

(Korea Advanced Institute of Science and Technology (KAIST), Korea) Creating the Viewing Experience of Color in Design Practice

Hyeon-Jeong Suk is an associate professor of Department of Industrial Design at KAIST leading the Color Laboratory. She received her B.S. and M.S. from the KAIST with degrees in industrial design and Doctor of Social Science degree in psychology

from University of Mannheim in Germany. She was the 2011–2014 Editor-In-Chief of the Journal of Korean Society for Emotion and Sensibility.

Hyeon-Jeong's research focuses on the affective effect of color on the human particularly to facilitate the empirical findings for design practices. Her publications include 2 books, 8 book chapters, 48 journal articles, and 95 conference proceedings.

With the expertise in color psychology and design research, her research group has conducted a number of industry-academia projects with Samsung Electronics, Samsung Display, LG Electronics, Hyundai Automobiles, Estee Lauder Inc., and more at color.kaist.ac.kr.



15:10-17:10 on October 16 (Mon) at Halla B, 3F

Se-Lee Lee (Ewha Womans University, Korea) 2018–2019 Color & Material Trend

Dr. Se-Lee Lee is an invited professor of the college of Art & Design at Ewha Womans University(Seoul), teaching fashion design and she's also working as a research commissioner of the Color Design Research Institute in Ewha Womans

University.

She received B.S. and B.A. degrees in Department of Clothing & Textiles and Department of Education from Yonsei University(Seoul) and obtained M.F.A and Ph.D. in Fashion Design from Ewha Womans University.

Attending the master's course in Fashion Design at Domus Academy(Milan), she has been chosen as a Finalist of Triumph Inspiration Award 2012 National(Italy) and Vogue Italy Talents Selection 2013. She has been a member of Korea Fashion & Culture Association, Korea Society of Basic Design & Art, Korean Society of Design Science and Korea Society of Color Studies.

Recently she focus on research, an exhibition of fashion works and lectures on Design Trend, Fashion & Culture and Color Design and she has been interested in the research on fashion and design in the view of multidisciplinary approach.



08:30-10:30 on October 18 (Wed) at Samda, 3F

John Barbur

(City, University of London, United Kingdom)
Colour in Employment: A New Colour Grading Syste

Colour in Employment: A New Colour Grading System with Applications in Healthcare and Visually-Demanding Occupations

John Barbur is Professor of Optics & Visual Science in the Applied Vision Research Centre (AVRC) at City, University London. He combines fundamental vision science

with applied and clinical research, which underpins a long record of research achievement and wider impact. Work on camouflage for the Royal Signals and Radar Establishment led to insights into the processing of luminance and colour signals that have important applications in colour vision assessment. Development of novel research instrumentation and measurement techniques led to new methods for investigating mesopic vision, pupillometry, eye movements, visual search, spatial and chromatic vision, and also the effects of scattered light in the eye. John's P\_SCAN system makes binocular measurements of pupil size and eye movements, and has been used throughout the world for almost three decades. New components of the pupil response that link directly to alertness and attention and require the processing of specific stimulus attributes such as colour or motion in central areas of the visual cortex have been discovered with the P\_SCAN system. As a Fulbright Scholar, John worked as a Visiting Professor at the Center for Visual Science at the University of Rochester, N.Y. This work led to studies of mesopic vision supported by DTI (scales for the mesopic range), the EU (Mesopic Optimization of Visual Efficiency) and the DfT (medical aspects of fitness to drive). This was followed by EPSRC grants on "Minimizing Glare in Lighting Installations" and "Mesopic Optimization of Residential Street Lighting"

More recent work with the Civil Aviation Authority (UK) and the Federal Aviation Administration (USA) led to new pass/fail colour limits for aviation, which are used internationally. As a result, 35% of all applicants with congenital colour deficiency are now classed as safe to fly. The new Colour Assessment and Diagnosis, Rapid Flicker, Light Scatter and the Acuity-Plus tests have found applications within ophthalmology and visually demanding occupations. Significant laboratory refurbishments carried out during the past few years and sponsorship for projects designed to promote industrial and clinical applications of vision research strengthened the AVRC which is now internationally recognised as a leading centre in visual psychophysics and colour vision research.





08:30-10:30 on October 18 (Wed) at Halla A, 3F

Haisong Xu (Zhejiang University, China) Image Quality Assessment on Mobile Devices

Haisong Xu received his Ph.D. degree in optical engineering from Zhejiang University, Hangzhou, China, in 1993. He was a post-doctoral research fellow at the Institute of Industrial Control in Zhejiang University from 1994 to 1995 and at the Department

of Information and Image Sciences at Chiba University, Japan, from 1999 to 2001. At present, he is a professor at the State Key Laboratory of Modern Optical Instrumentation, College of Optical Science and Engineering, Zhejiang University. His current research interests include color science, imaging technology, and lighting engineering. He has published nearly 200 academic papers, 2 books, and 25 patents. He is the China representative of Country Committee in Division 1 (Vision and Color) of the International Commission on Illumination (CIE), the representative of the Color Association of China in the International Color Association (AIC) as well as in the Asia Color Association (ACA). His other academic duties include the president of the Color Association of China (CAC), the vice president of the China Fashion & Color Association (CFCA), the council members of the China Optical Society (COS) and the China Illuminating Engineering Society (CIES), the member of the National TC 120 on Color of Standardization Administration of China (SAC), and etc.



10:50-12:35 on October 18 (Wed) at Halla A, 3F

Lindsay MacDonald (Association Internationale de la Couleur, United Kingdom) Melanopsin and Colour Vision

Lindsay MacDonald has been involved in colour vision science since 1985, when he was manager of a 3-year research project on colour appearance modelling under the guidance of Dr Robert Hunt. He has since co-edited ten books and authored

over 200 papers in conference proceedings and journals, all on diverse aspects of colour.

He completed his PhD in colour image science in 2015 at University College London (UCL), where he is now Honorary Professor, co-supervising seven PhD students in various aspects of imaging and cultural heritage. He is a Fellow of the British Computer Society (BCS), the Royal Photographic Society (RPS) and the Society of Image Science and Technology (IS&T).

He has been involved in AIC since 2001 and has presented 25 papers at AIC meetings. He was Co-Chair of the organising committee for the AIC Congress in 2013 in Newcastle (UK), and since 2010 has edited the AIC Annual Report. He is currently AIC Secretary/Treasurer.





10:50-12:20 on October 18 (Wed) at Samda, 3F

Anadi Martel

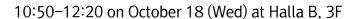
(International Light Association (ILA), Belgium)
Colour for Health: Update on the Latest Developments in Light Therapy

Since 2011, Anadi Martel is president of the International Light Association, a group of researchers exploring the therapeutic applications of light. The ILA acts as a bridge between leading scientists offering their latest research, and the practitioners of the diverse forms of light therapy.

Physicist by training, Anadi Martel has been applying his intimate knowledge of electronics to the development of instruments working in novel ways with sound, light, and brainwaves. His Spatial Sound Processors have been used worldwide by professionals in psychoacoustics, multimedia and cinema. His work has led to patents in the field of Light Modulation, and recently in LED-based design.

When not travelling as a design consultant in special audiovisual projects for the likes of Cirque du Soleil and the New York Metropolitan Opera, he can mostly be found in his lab in the Canadian forest, working to refine the Sensora, a multi-sensorial environment combining a number of his inventions and exploring the overlapping frontiers of art, technology, therapy and consciousness. He is president of Sensortech Inc. (www.sensora.com).

His book on the therapeutic applications of light, "The Power of Light – The Dawn of a New Medicine", was recently published in France and will shortly be available in English.



Shin'ya Takahashi

(Tokaigakuen University, Japan)

The Possibilities and Limitations of the Psycho-behavioral Effects of Color

Shin' ya Takahashi is a professor at Tokaigakuen University, which is located in Nagoya, Japan.

He graduated in psychology at Nagoya University, and got his Ph.D. in 1995. After serving in Toyota Technological Institute, he moved back to Nagoya University to hold an associate professor in the department of psychology. Then, from 2014, he has been holding his present position. He has been conducting research in visual perception including visual illusions and color contrast/assimilation, and in color psychology, especially focusing his interest on color preference and psycho-behavioral effects of color. Since 2003, he has attended eight congresses and meetings of the AIC and presented his work mainly on the psycho-behavioral effects of color, which is the subject of the present lecture. Also, he has been serving as the President of the Color Science Association of Japan since 2016.





10:05-12:05 on October 19 (Thu) at Samda, 3F

Jeong-Tai Kim (Kyung Hee University, Korea) Regulating Artificial Light at Night for Protecting Health and Sustainability in South Korea

Dr. Jeong Tai Kim is Distinguished Professor at Kyung Hee University where he has been on faculty for 35 years. He received PhD in Architecture from Yonsei University

in Seoul (1985) and completed Post Doc. at University of Cambridge in UK (1986/1987). His research focuses on smart lighting, sustainable lighting and light pollution. He played a key role in legislating Korea light pollution prevention act. He currently acts as President of Korea National Chapter of International Dark—Sky Association and Korea Society of Lighting and Visual Environment.

He has served SET 2008 (7th International Conference on Sustainable Energy Technologies, Seoul) and SLLP 2014 (1st International Conference on Sustainable Lighting and Light Pollution, Seoul) as General Chair and 2016 LUCI AGM Seoul (Lighting Urban Community International Annual general meeting in Seoul) as Local Steering Committee Chair. Professor Kim serves in leading international journals as Coeditorin-Chief of the International Journal of Sustainable Lighting, editorial board member of the Indoor and Built Environment and Energy and Buildings.



10:05-12:05 on October 19 (Thu) at Halla B, 3F

Tien Rein Lee (Chinese Culture University, Taiwan) A Modern Approach to Health in Conventional Chinese Color Thought

Prof. Dr. Tien-Rein Lee's professional expertise comprises practical interest and experience in Visual Communications and New Media, and an academic focus in Color Communication, Color and Culture, and Media Technology. As the Founding

President of the Color Association of Taiwan (CAT), Prof. Lee is a color research pioneer establishing color studies and color application networks in Taiwan, with China, Asia, and worldwide. He was also the General Chair of the AIC 2012 Interim Meeting: "In Color We Live – Color and Environment" held in Taipei, and has taken position of AIC Vice President in 2016.

Prof. Lee was President of the Chinese Culture University from 2003–2009, and has acquired this position again since August 2013. He had been Chairman of the Department of Graphic Communications, Dean of the College of Journalism Communications, Dean of the Center for Information and Communications, and Dean of General Affairs at CCU. He is also the President of the Chinese Association for Life-long Learning (CALL). Prof. Lee originally graduated with a B.S. in Print Media Communications and a M.A. in Journalism from Chinese Culture University. He also received a M.A. in Visual Communication from University of California, Los Angeles (UCLA), and a Ph.D. in Culture and Communication from New York University (NYU).

His experience covers a vast range of international collaboration on academic, cultural and administrative levels: at Chinese Culture University, he actively promoted and organized the participation of color scientists at international conferences and congresses.



10:05-12:05 on October 19 (Thu) at Halla A, 3F

Hirohisa Yaguchi (Chiba University, Japan) Applications of CIE2015 Cone-Fundamental Based Colorimetry

Hirohisa Yaguchi is an Emeritus Professor at Chiba University, Japan. He graduated in Photographic Engineering at Chiba University, then got his PhD at Tokyo Institute of Technology in 1980. In 1982, he moved to National Research Council Canada

and worked with Dr. Günter Wyszecki as a Research Associate. Then in 1986, he moved to Chiba University. He has been conducting research and supervising graduate and postgraduate students at the Department of Information and Image Sciences in color vision, photometry, colorimetry, and its application to imaging science. He has published over 200 scientific papers and nearly 10 books. He also contributes to educate students in Asian Countries. He has been teaching experiments method for color vision and colorimetry at Rajamangala University of Technology Thanyaburi (RMUTT) as an International Advisor, Thailand, and color reproduction at National Taiwan University of Science and Technology (NTUST), Taiwan as an Adjunct Professor. He has been very active in color societies, particularly in CIE and AIC. He is Past President of CIE–Japan, chair of CIE TC1–90 on the "Color Fidelity Index". He was awarded the CIE Awards in 2009. He contributed to hold two AIC meetings in Japan. He was the Scientific Program Chair of the 8th AIC Congress, Kyoto in 1997 and the Steering Committee Chair of the midterm meeting of AIC2015 Tokyo. Also, he served as an Executive Committee Member of AIC from 2002 to 2005. He serves as an associate editor of Color Research and Application.



14:55-17:10 on October 19 (Thu) at Samda, 3F

Yoshi Ohno (CIE President, National Institute of Standards and Technology, USA) CIE Research Strategy – Future of Color Quality Metrics for Lighting

Yoshi Ohno received his Ph.D. in engineering from Kyoto University, Japan. He started his career at Lighting Research Laboratory of Panasonic, Osaka Japan. He joined NIST in 1992 as Project leader for photometry, served as Group Leader for

Optical Sensor Group from 2003 to 2012, and appointed as NIST Fellow since 2010. His research spans widely from photometry, colorimetry, spectroradiometry to color quality of light sources, recently focused on solid state lighting. He is very active in national and international standards committees. He is Fellow of IES, and is known as the primary author of IES LM-79 (Test method for solid state lighting products), LM-85 (Measurement of high-power LEDs), ANSI C78.377 (Chromaticity specifications for solid state lighting products), CIE TN 001 (Chromaticity difference specification for light sources), and he also chaired CIE TC2-71 that produced CIE S 025 (Test method for LED lamps, luminaires, and modules). He served as CIE Division 2 Director (2007–2011), Vice President-Technical (2011–2015) and now serves as President of CIE (2015–2019). Ohno represents NIST in Consultative Committee of Photometry and Radiometry (CCPR), chairs CCPR Working Group on Key Comparisons. He received CIE de Boer Gold Pin Award in 2007, US Department of Commerce Silver Medal Award in 2009, U.S. Department of Energy SSL Visionary Award in 2014 and others.

# AUTHOR INDEX

### AIC 2017 JEJU, KOREA

### **Author Index**

Α		Casciani, Daria	OS21-7
Ahn, KeunYoung	PS02-03	Cha, Woo-Jin	PS03-06
Akizuki, Yuki	OS07-8	Chae, Youngjoo	PS03-48
Alawad, Abeer	OS08-3	Chandernagor, Elodie	OS05-7
Aly, Reda Hamada	PS02-19	Chang, Chan-hee	PS01-38
Amookht, Sakineh	OS22-5	Chang, Yeon-Hee	PS03-25
Arai, Ryusuke	PS03-57	Chang, Yeun-Hee	PS01-87
Attiah, Douha	OS08-3	Chen, Hung-Shing	OS21-6
Attiah, Douha	OS09-8	Chen, I-Ping	PS02-13
Ayama, Miyoshi	0S09-6	Chen, Lu	PS02-29
Ayama, Miyoshi	PS02-07	Chen, Lu	PS02-32
Ayama, Miyoshi	PS02-09	Chen, Wang-I	OS23-1
Ayama, Miyoshi	PS03-21	Chen, Yiju	OS02-4
Ayama, Miyoshi	PS03-59	Chen, Yun	OS04-5
Azuma, Miyuki	OS23-6	Chen, Zhemin	OS01-7
•		Chen, Ziyu	PS01-05
В		Chen, Ziyu	PS01-54
Bae, JuYoon	PS02-64	Cheng, Chih-Wen	PS01-01
Bae, Seo-Hee	PS02-81	Cheung, Vien	OS02-8
Bae, Yongjin	PS02-50	Cheung, Vien	OS08-3
Baek, Jin-Young	PS03-24	Cheung, Vien	PS01-45
Bang, Sojeong	PS01-66	Chiang, Hou-Chi	OS07-3
Barbur, John	OS12-1,2	Cho, Seong-sun	PS01-69
Barricelli, Barbara Rita	PS03-49	Cho, Yoon Ji	OS13-4
Basic, Nina	OS22-7	Cho, YooNa	PS02-60
Beak, Ji-hoi	PS01-46	Choi, Gyoung-Sil	PS01-22
Bergström, Berit	OS03-6	Choi, Gyoung-Sil	PS01-30
Bernad, Berta	PS03-60	Choi, Gyoung-Sil	PS01-49
Blattner, Peter	OS22-7	Choi, Gyoung-Sil	PS01-80
Blin-Barrois, Barbara	OS09-9	Choi, Gyoung-Sil	PS02-63
Bonanomi, Cristian	PS03-49	Choi, Gyoung-Sil	PS02-68
Botteri, Lea	OS04-4	Choi, Gyoung-Sil	PS01-10
Butovskaya, Marina	PS03-02	Choi, Gyoung-Sil	PS01-75
		Choi, Gyoung-Sil	PS03-03
С		Choi, Gyoung-Sil	PS03-05
Cabal, Sebastian Camilo	OS20-5	Choi, Hyo-Sun	0S08-7
Caiazzo, Maasimo	0320-3 0S11-7	Choi, Im-Jung	PS02-25
Campos, Joaquin	PS03-60	Choi, InKyu	PS01-48
Campos, Joaquin	PS03-61	Choi, Inyoung	PS02-12
Cartwright, Virginia	0S11-1	Choi, JinHee	PS01-88
Cartwingin, vingillia	0311-1	Choi, Jinkyung	PS02-38

Choi, Jinkyung	PS02-43	Dinet, Éric	OS12-7
Choi, Kwanghyun	PS01-13	Doi, Motonori	OS19-4
Choi, Kwanghyun	PS03-11	Doucet, Patrick	OS09-9
Choi, Kwanghyun	PS03-36		
Choi, Kwanghyun	PS03-44	Е	
Choi, Kwanghyun	PS03-45	Ekpoothor, Natchanun	OS15-6
Choi, Kwanghyun	PS03-08	Elaraby, Ibrahim	PS02-19
Choi, Kyungah	PS02-01	Eom, Soonchol	PS02-84
Choi, Kyungah	PS03-01	zom, soonenet	1302 01
Choi, Mi	PS02-44	_	
Choi, Seongho	PS02-33	F	
Choi, Sueran	PS01-18	Fang, Fufu	OS16-5
Choi, Sungwoo	PS01-49	Fang, Fufu	OS16-6
Choi, Sungwoo	PS03-44	Feng, Shu-Ping	OS01-1
Choi, Won-jung	PS01-75	Feng, Shu-Ping	OS12-3
Choi, Yerim	PS01-09	Fernández, Adrián	PS03-68
Choi, You-Jin	OS08-7	Fernández-Maloigneb, Christine	PS03-60
Choi, YuJin	OS20-4	Fernandez–Morales, Angelica	PS02-26
Choi, YuJin	PS01-23	Ferrero, Alejandro	PS03-60
Chong, Jongho	PS03-64	Ferrero, Alejandro	PS03-61
Chou, Ching-Ju	OS21-6	Ferrero, Alejandro	PS03-68
Chu, Hyeyong	PS03-64	Findlater, Keith Derek Martin	OS13-6
Chu, Jinjin	OS10-7	Finlayson, Graham	OS16-5
Chung, Hyun Sun	PS02-20	Finlayson, Graham	OS16-6
Chung, Hyun Sun	PS03-78	Finlayson, Graham	OS16-4
Chung, Vien	OS22-3	Fotovvat, Bita	PS03-83
Chung, Yoo Jin	PS01-68	Fu, Wei-Min	PS01-01
Clermont-Gallerande, Helene De	OS09-9	Fuchida, Takayoshi	PS03-35
Costa, Sara Antunes	OS18-8	Fuchida, Takayoshi	PS03-37
Csillag, Paula	OS23-2	Fujimura, Tsutomu	OS09-3
Cui, Guihua	OS07-1	Funt, Brian	OS07-2
Cui, Guihua	OS10-7	Funt, Brian	OS10-6
Cui, Guihua	OS13-4	Fytopoulou, Chrysi	PS02-02
Cui, Guihua	OS13-5		
,		G	
D		Gaibor, Art Ness Proano	OS01-4
Dai, Yao	PS02-13	Gao, Cheng	PS03-52
Dalirnaghadeh, Donya	OS14-6	Garside, D.	OS13-1,2
Dan, Han	PS01-35	Gascón, Ana	PS02-26
Dapkus, Henrikas	OS21-3	Geldof, Muriel	OS01-4
Deeb, Rada	0S18-7	Georgoula, Maria	OS07-1
Delaney, John	OS01-4	Ghasemi, Forouzandeh	OS24-1
Delcampo-Carda, Anna	0S03-4	Glogar, Martinia Ira	OS04-4
Deydier, Julie	0S09-9	Gomez-Robledo, Luis	PS03-66
Diao. Changvu	OS01-7	Gong, Han	OS16-4

Gong, Han	OS16-5	He, Hong	OS01-7
Gong, Rui	OS10-1,2	He, Ruili	OS13-5
Gong, Rui	OS10-4	He, Shuilan	PS03-35
Gong, Rui	OS21-4	He, Shuilan	PS03-37
Gorji, Kandi Saeideh	0S22-5	Hebert, Mathieu	OS18-7
Gorji, Kandi Saeideh	PS03-75	Hendriks, Ella	OS01-4
Gorji, Kandi Saeideh	PS03-82	Henry, Phil M	PS02-48
Gorji, Kandi Saeideh	PS03-83	Heo, Jaehee	PS01-39
Gou, Aiping	0S06-4	Hirai, Keita	PS03-58
Gou, Aiping	OS06-5	Hirata, Koichi	0S21-9
Gouveia, Anna Paula Silva	0506-5 0S04-6	Hirschler, Robert	0521-9 0S16-8
	OS04-6		0516-8 0523-2
Grancaric, Ana Marija		Hirschler, Robert	
Green-Armytage, Paul	OS05-5	Hong, Bora	PS01-34
Griber, Yulia A.	OS05-4	Hong, Dami	PS01-29
Griber, Yulia A.	0S17-3	Hong, HaeRyung	PS03-19
Griber, Yulia A.	PS02-41	Hong, Jung In	PS01-50
Griffin, Lewis D.	OS05-3	Hong, Minhee	PS01-83
Griffin, Lewis D.	OS05-6	Hong, Minhee	PS02-88
Groyecka, Agata	PS03-02	Hong, Minsun	PS02-80
		Hong, MinYoung	PS01-77
Н		Hong, Qi-Zhu	PS03-54
Ha, Hyeyoung	PS02-18	Hong, SeungMin	PS01-41
Ha, JiMin	PS03-10	Horiuchi, Takahiko	OS22-6
Ha, JiMin	PS03-63	Horiuchi, Takahiko	PS03-56
Ha, Sooknyung	PS02-89	Horiuchi, Takahiko	PS03-57
Hagenlocher, Esther	OS08-1	Horiuchi, Takahiko	PS03-58
Hagenlocher, Esther	OS11-6	Hoshino, Yasushi	OS18-5
Hai, Hu Ming	PS01-35	Hou, Dandan	OS11-3
Hamada, Kazuki	PS03-74	Hsiao, Chiang	PS03-54
Han, Bo-Mi	PS02-76	Hsieh, Tsuei-Ju	OS23-1
Han, Chae Eun	PS01-73	Hsieh, Tsuei-Ju	PS01-79
Han, Eun-Hee	OS08-7	Hsieh, Tsuei–Ju	PS02-78
Han, Eunji	PS02-42	Hua, Tao	PS03-48
Han, Jisoo	OS03-7	Huang, Min	OS10-7
Han, Jungmin	PS02-81	Huang, Min	OS13-5
Han, Jungmin	PS02-82	Huang, Qingmei	OS20-2
Han, SuJin	PS01-23	Huang, Ting–Wei	OS07-3
Han, SuJin	PS02-24	Huang, Xiaotong	PS03-52
Hanari, Takashi	PS03-15	Huang, Yu-Wen	OS02-3
Haneishi, Hideaki	OS12-6	Huertas, Rafael	OS14-5
Haneishi, Hideaki	OS24-5	Huh, Ji Hye	PS01-56
Hanenburg, Jeannette	OS17-3	Hung, Wei-Chun	OS07-5
Hanselaer, Peter	OS10-8	Hur, Kyung Eun	PS02-73
Hansuebsai, Aran	OS18-5	Huraibat, Khalil	PS03-61
Hatakeyama, Kunihiro	PS03-71	Hutchings, J. B.	OS18-3
,			

Hwang, Jisoo	PS03-50	Jeong, Seong Yun	PS01-37
Hwang, Jisoo	PS03-53	Jeong, Sun Ae	PS02-58
Hwang, Joong-Ho	OS08-7	Jeong, Wonyoung	PS03-80
Hwang, Sungjoo	PS01-77	Jeong, Yoona	PS01-36
Hwang, Yoo-Ji	PS02-56	Jeong, Yunjeong	PS01-76
		Jhuang, Jyun–Wei	OS07-3
1		Ji, Yeonhui	PS03-01
Igarashi, Takanori	OS09-3	Jiang, Li	PS03-52
lizuka, Tomomi	OS07-8	Jiang, Luiluo	OS10-7
In, Moon Su	PS01-13	Jiang, Yanli	OS20-2
Inuzuka, Yusuke	PS03-59	Jin, Eun Mi	PS02-74
Ishida, Taiichiro	PS03-20	Jing, Yuhang	OS20-3
Ishiguro, Eiji	OS15-4	Jong, Kyeong Ah	PS02-90
Ishiguro, Eiji	OS15-5	Joo, Jung Hee	PS01-21
Ishikawa, Tomoharu	0S09-6	Jun, Jae-Hoon	PS03-24
Ishikawa, Tomoharu	PS02-07	Jung, DaMi	PS01-17
Ishikawa, Tomoharu	PS02-09	Jung, EuiTay	PS01-48
Ishikawa, Tomoharu	PS03-21	Jung, Eunjung	PS01-30
Ishikawa, Tomoharu	PS03-59	Jung, Ivar	OS17-3
Isoi, Wataru	PS02-22	Jung, Min-Ho	OS22-3
Itoh, Nana	OS13-7	Jung, NaYeon	PS01-74
•		Jung, Yeonja	PS03-17
I		Jung, Yeonja	PS01-32
Jackson, Mike	OS19-5	Jung, Yeonja	PS01-84
Jafari, Razieh	OS19-1	Jung, Yeonja	PS02-54
Jang, Haejung	PS02-67	Jung, Yujin	PS01-18
Jang, HyeJung	PS02-55	Jutterstrom, Per	OS10-5
Jang, Jieun	PS03-38		
Jang, Soyoung	PS02-47	K	
Jang, Ye-Eun	PS01-77	Kadamani, Samira	OS20-5
Janssens, Koen	OS01-4	Kaede, Kazunori	OS15-4
Je, Na-na	PS03-03	Kaede, Kazunori	OS15-5
Jeon, DuSoo	PS02-16	Kagimoto, Akari	OS21-9
Jeon, Hayeon	PS03-12	Kanahira, Takashi	OS15-4
Jeon, Jihun	OS21-5	Kanahira, Takashi	OS15-5
Jeon, Nu-Ri	PS03-34	Kanai, Nobuhoshi	OS08-5
Jeong, Chan-Ung	PS03-36	Kanari, Kota	PS02-07
Jeong, Chan-Ung	PS03-38	Kang, Hye Ju	PS02-74
Jeong, Chan-Ung	PS03-26	Kang, HyeRan	OS18-6
Jeong, Chan-Ung	PS03-29	Kang, Hyunbin	PS01-77
Jeong, Chan-Ung	PS03-32	Kang, Suk Pyo	PS02-74
Jeong, Chan-Ung	PS03-34	Kang, Sung Hae	PS01-43
Jeong, Jaeseung	PS01-67	Kang, Sung Hae	PS01-56
Jeong, Kyeong Ah	PS02-91	Kang, Sung Hae	PS02-25
Jeong, Mulin	PS01-09	Kang, Sunghyun Ryoo	OS12-4

Kang, Tae Gyu	OS21-5	Kim, Joo Yun	PS03-55
Kang, Yoonjoo	PS02-45	Kim, Juhee	PS02-85
Katemake, Pichayada	OS12-7	Kim, Jung Hyun	PS02-37
Katemake, Pichayada	OS18-7	Kim, JungEun	PS02-28
Kavehei, Farnam	PS03-75	Kim, Juyeon	PS02-34
Kawanabe, Tadaaki	OS24-4	Kim, Juyeon	PS02-38
Kawashima, Yuki	PS03-71	Kim, Juyeon	PS02-40
Kawasumi, Mikiko	PS01-53	Kim, Juyeon	PS02-43
Kawasumi, Mikiko	PS03-28	Kim, Juyeon	PS02-46
Kikuchi, Kumiko	PS03-70	Kim, Lee-Young	PS02-56
Kikuchi, Kumiko	PS03-74	Kim, Min-Gi	OS08-7
Kikuchi, Mamiko	OS09-3	Kim, MinJi	PS01-48
Kim, Aeri–Christina	PS02-62	Kim, Minkyoung	PS01-84
Kim, Bomi	PS01-55	Kim, Min-Kyoung	PS01-46
Kim, Changsoon	PS01-27	Kim, Min-Kyoung	PS01-69
Kim, Changsoon	PS01-66	Kim, Min-Kyoung	PS02-44
Kim, Cheol-Young	PS01-67	Kim, Min-Kyoung	PS02-62
Kim, DoKyung	PS01-17	Kim, Min-Kyoung	PS02-79
Kim, Eun-ji	PS02-56	Kim, Min-Kyoung	PS03-23
Kim, Eunjin	OS16-7	Kim, Min-Kyoung	PS03-25
Kim, Eunjin	PS03-86	Kim, MinKyung	PS01-61
Kim, EunJung	PS01-71	Kim, Minsun	PS02-08
Kim, Eunkyung	PS03-84	Kim, Moon Sook	PS01-64
Kim, GokMi	PS01-85	Kim, Myoung Suk	PS01-50
Kim, Han-na	PS02-56	Kim, MyungSun	PS01-16
Kim, Hea Won	PS02-83	Kim, Nam-il	PS01-28
Kim, HeeJin	PS02-35	Kim, Na-Ra	OS08-7
Kim, Hyang Ran	PS01-57	Kim, NuRi	PS02-57
Kim, Hyein	OS03-7	Kim, Saet Byul	PS01-73
Kim, Hyo Jung	PS01-57	Kim, Seong Hui	PS03-79
Kim, Hyosik	PS02-16	Kim, Seongkyun	PS01-67
Kim, Hyosun	PS02-18	Kim, Seong-Uk	PS03-32
Kim, Hyosun	PS02-65	Kim, SeougHyun	PS03-65
Kim, Hyun Sun	PS01-12	Kim, SeungHyun	PS01-19
Kim, Hyuna	PS02-61	Kim, SeungHyun	PS01-41
Kim, Hyunjung	OS04-8	Kim, SonHyung	PS01-16
Kim, Hyunseok	OS21-5	Kim, Su Min	PS01-73
Kim, JeongHun	OS18-6	Kim, Sun Ah	PS01-34
Kim, Jeong–Tai	OS18-1,2	Kim, Sungchul	PS03-64
Kim, Ji Hye	PS02-75	Kim, Sun-Young	PS02-56
Kim, JinYoung	PS02-10	Kim, Suyoung	PS03-64
Kim, Ji-Sun	PS03-24	Kim, Taesoo	PS03-01
Kim, Jiwon	PS01-19	Kim, WonJi	PS01-04
Kim, Jiyeon	OS03-7	Kim, Yeawon	PS03-78
Kim, Joo Yun	PS02-05	Kim, Yeawon	PS02-20

Kim, Yelim	PS01-62	Kurabuchi, Yoko	OS24-5
Kim, Yelim	PS01-72	Kutsuzawa, Tomoko	OS07-8
Kim, Yeon Mi	PS01-73	Kwak, Youngshin	PS02-18
Kim, YooJin	PS03-65	Kwak, Youngshin	PS03-12
Kim, Yoomi	PS01-40	Kwon, Jain	OS08-4
Kim, Yoonjung	PS02-55	Kwon, Jiyoung	PS01-65
Kim, Yoonjung	PS03-81		
Kim, YoonYoung	PS03-65	L	
Kim, YooSun	OS08-8	Ladoson, Jack A.	OS19-6
Kim, YooSun	OS11-4	Lanaro, Matteo Paolo	PS03-49
Kim, YooSun	PS01-17	Lans, Ivo van der	OS01-4
Kim, YooSun	PS01-19	Lans, Ivo van der	OS10-3
Kim, YooSun	PS01-41	Lans, Ivo van der	PS03-61
Kim, YooSun	PS03-62	Larkins, Gerald	PS03-09
Kim, YooSun	PS03-65	Lee, Ansoo	PS01-70
Kim, Youjin	OS21-5	Lee, Byeong-Gwan	PS03-29
Kim, Youn Jin	OS07-7	Lee, Byung Min	PS03-46
Kim, Young Jun	OS03-7	Lee, Byung Min	PS03-47
Kim, Youngdae	PS01-16	Lee, Chaeeun	PS03-12
Kim, Young-Ho	PS02-56	Lee, Chan-Su	OS18-6
Kirchner, Eric	OS01-4	Lee, Cheolhee	PS02-51
Kirchner, Eric	OS10-3	Lee, Dahyun	PS01-20
Kirchner, Eric	PS03-51	Lee, Dong-Hoon	PS03-53
Kirchner, Eric	PS03-61	Lee, Dong-Hun	PS02-21
Kita, Hideo	OS19-6	Lee, Dong-Hun	PS03-26
Kitaguchi, Saori	OS05-8	Lee, Dong-Su	PS02-56
Kitaoka, Akiyoshi	PS03-09	Lee, Eunjung	PS03-64
Ko, Somi	PS01-43	Lee, EunKyoung	PS02-71
Ko, Unbyoll	PS03-64	Lee, EunKyoung	PS02-72
Ko, YoungJi	PS01-19	Lee, GeeYoung	PS01-41
Kobayashi, Masashi	PS01-78	Lee, Gyeonghwa	OS02-8
Kobayashi, Masashi	PS03-85	Lee, Gyoobaek	PS01-03
Koeckhoven, Pim	PS03-51	Lee, Heeeun	PS02-70
Komori, Masashi	OS19-4	Lee, Heewon	PS02-04
Kondo, Paru	PS03-56	Lee, Heewon	PS02-08
Kong, Mario S .Ming	OS18-8	Lee, Heewon	PS02-11
Konno, Atsushi	PS03-71	Lee, Heewon	PS02-14
Kotera, Hiroaki	0S13-3	Lee, Heewon	PS02-77
Krishnaswamy, Narayanan	OS02-7	Lee, Ho	PS03-11
Kuehni, Rolf G	OS14-4	Lee, HwanHee	PS01-16
Kulkarni, Atul	OS03-7	Lee, HyoJeong	PS03-65
Kumakura, Akihisa	PS03-59	Lee, Hyunjee	PS01-27
Kuo, Wen-Guey	PS01-01	Lee, Jeesun	PS01-42
Kuo, Wen-Guey	PS03-54	Lee, Jeong Hun	OS03-7
Kuo, Yi-Ting	OS04-7	Lee, Ji–Hwan	OS18-6

Lee, Ji-Hyung	PS01-67	Lee, Suenghee	PS02-14
Lee, Jin Hee	OS11-7	Lee, Suhui	PS01-52
Lee, Jin Hee	OS17-4	Lee, TaeKyung	PS01-04
Lee, Jinbock	PS02-08	Lee, Tien-Rein	OS17-1,2
Lee, Jin-Sook	PS02-77	Lee, Tien-Rein	OS23-1
Lee, Jin-Sook	PS02-86	Lee, Wen-Yuan	OS02-3
Lee, Jin-Sook	PS03-08	Lee, Wen-Yuan	OS09-7
Lee, Jin-Sook	PS03-26	Lee, Wen-Yuan	OS14-5
Lee, Jin-Sook	PS03-29	Lee, Youngsuk	PS01-67
Lee, Jin-Sook	PS03-32	Lee, YounJin	OS20-4
Lee, Jin-Sook	PS03-34	Lee, YounJin	PS01-20
Lee, Jin-Sook	PS03-40	Lee, YounJin	PS01-29
Lee, Jin-Sook	PS03-44	Lee, YounJin	PS01-42
Lee, Jin-Sook	PS03-45	Lee, YounJin	PS01-52
Lee, Jiwon	PS02-17	Lee, YounJin	PS01-61
Lee, JuHyun	PS03-22	Lee, YounJin	PS01-83
Lee, Jung-Eun	PS01-14	Lee, YounJin	PS02-03
Lee, Jung-Ran	PS02-79	Lee, YounJin	PS02-15
Lee, JunYoung	PS01-74	Lee, YounJin	PS02-24
Lee, KeeYoung	PS02-06	Li, Bing	OS18-3
Lee, Keunbum	PS01-67	Li, Changjun	OS09-2
Lee, KyungMin	PS02-55	Li, Changjun	OS09-4
Lee, KyungMin	PS03-67	Li, Changjun	OS10-7
Lee, KyuRim	PS01-44	Li, Changjun	PS03-52
Lee, Misuk	OS08-8	Li, Fenghua	OS21-4
Lee, Mi–Sun	PS01-10	Li, Wei	PS02-59
Lee, SangDuk	PS01-41	Li, Yu-Pin	PS01-01
Lee, Se-Lee	OS05-1,2	Liang, Jing	OS07-1
Lee, Seoa	PS02-53	Ligterink, Frank	OS01-4
Lee, Seokhyun	PS01-08	Lim, Geoni	PS01-15
Lee, Seokhyun	PS01-11	Lim, Hye-Won	OS09-8
Lee, Seokhyun	PS01-86	Lim, Joy Jee Yoon	OS11-2
Lee, Seokhyun	PS02-50	Lim, Junhyung	PS01-06
Lee, Seokhyun	PS02-52	Lim, Loo Pay	PS01-40
Lee, Seokhyun	PS02-84	Lim, Seong-Wook	PS03-08
Lee, Seokhyun	PS02-85	Lin, Hsueh-Fen	OS01-1
Lee, Seokhyun	PS01-14	Lin, Hsueh–Fen	OS12-3
Lee, Seokhyun	PS02-76	Lin, Jing	OS17-7
Lee, Seri	PS02-45	Lin, Tzu–Han	PS03-54
Lee, Seungbae	PS03-64	Lin, Yandan	OS11-3
Lee, Seungjae	PS01-67	Liu, Haoxue	OS13-5
Lee, Seungyeon	PS02-63	Liu, I–Han	OS09-1
Lee, Su Mi	PS02-31	Liu, Li	OS01-3
Lee, Subin	PS01-18	Liu, Xinxiong	OS02-5
Lee, Suenghee	PS02-11	Liu, Yaowu	OS10-7

Liu, Yu	OS13-5	Mirzaei, Hamidreza	OS07-2
Llopis-Verdú, Jorge	OS03-4	Mirzaei, Hamidreza	OS10-6
Lu, I–An	PS03-54	Miyake, Riko	PS03-15
Lu, Yan	OS11-3	Miyake, Riko	PS03-16
Lucca, Adrien Gary	OS01-2	Miyake, Yoichi	OS24-4
Luo, Ming Ronnier	OS07-1	Mizokami, Yoko	PS03-70
Luo, Ming Ronnier	OS07-7	Mizokami, Yoko	PS03-74
Luo, Ming Ronnier	OS09-5	Mizutani, Yoshikazu	OS05-8
Luo, Ming Ronnier	OS10-7	Moh, Sang Hyun	OS03-7
Luo, Ming Ronnier	OS10-8	Moon, EunBae	OS04-2
Luo, Ming Ronnier	OS13-4	Moon, EunBae	PS01-81
Luo, Ming Ronnier	OS13-5	Moon, SeongHee	OS08-8
Luo, Ming Ronnier	0S18-3	Mori, Toshio	PS03-16
Luo, Ming Ronnier	OS19-3	Mori, Yuko	PS01-78
Luo, Ming Ronnier	OS21-6	Mori, Yuko	PS03-85
Luo, Ming Ronnier	OS22-1	Morita, Akira	OS24-3
Luo, Ming Ronnier	OS22-2	Morita, Akira	OS24-4
Luo, Ming Ronnier	OS22-4	Moriwaki, Atsushi	OS19-2
Lupinacci, Ana Lucia	OS23-2	Moriyama, Nana	PS01-53
		Mughal, Muhammad Farhan	OS19-3
M		Murai, Kazunari	OS24-3
Ma, Shining	OS22-2	Muramatsu, Keiichi	OS15-4
MacDonald, Lindsay W.	OS19-5	Muramatsu, Keiichi	OS15-5
MacDonald, Lindsay W.	OS05-3	Musaev, Arpbai	PS03-12
MacDonald, Lindsay W.	OS13-1,2	Musante, Fulvio	OS21-7
Mackiewicz, Michal	0S16-5	Muselet, Damien	OS18-7
Maki, Kiwamu	OS20-1	Mylonas, Dimitris	OS05-3
Makino, Akiyo	OS01-5	Mylonas, Dimitris	OS05-4
Mally, Edda	OS17-4	Mylonas, Dimitris	OS05-6
Manabe, Yoshitsugu	PS03-77		
Mao, Jinjin	OS01-7	N	
Martel, Anadi	OS15-1,2	Nagai, Takehiro	PS03-71
Martínez-Verdú, Francisco	OS10-3	Nakada, Takaaki	OS12-6
Mashiko, Naoya	OS15-4	Nakaguchi, Toshiya	OS12-6
Mashiko, Naoya	OS15-5	Nakaguchi, Toshiya	OS24-3
Matsumoto, Akiko	PS03-09	Nakaguchi, Toshiya	OS24-4
Matthews, Bryan	OS02-8	Nakaguchi, Toshiya	OS24-5
Melgosa, Manuel	OS10-7	Nakajima, Yuki	PS03-35
Melgosa, Manuel	OS13-5	Nakajima, Yuki	PS03-37
Melgosa, Manuel	PS03-60	Nakamura, Shinji	PS03-07
Melgosa, Manuel	PS03-68	Nakaya, Ryota	OS20-6
Miguel MArtínez-Verdú, Francisco	PS03-61	Namiki, Takao	OS24-3
Millwaters, Lauren	PS02-48	Namiki, Takao	OS24-4
Min, Jihae	PS02-68	Negishi, Ippei	OS20-6
Minamoto, Takehiro	0S23-6	Nieves, Juan Luis	PS03-30

Nieves, Juan Luis	PS03-66	Ouyang, Yuan	OS07-3
Nishikawa, Tomohiro	OS15-5	Ou-Yang, Mang	OS07-3
Niu, Jun-Kai	PS02-78	Oyama, Shinichi	PS03-28
No, Tea Hwan	PS01-50		
Noh, Kyung-Ho	PS03-33	Р	
		Pablo, Manyé	OS23-3
0		Paik, Jinkyeong	PS01-72
Obama, Tomoko	OS08-5	Paik, Jinkyeong	PS01-62
Oda, Shigeto	OS12-6	Pan, Jun	PS02-13
Oh, Han-Byeol	PS03-24	Pan, Qianqian	OS04-5
Oh, Jeongrok	PS03-44	Pan, Qianqian	OS09-2
Oh, Jeongrok	PS03-45	Pan, Qianqian	OS09-4
Oh, Jiyeon	PS01-63	Pan, Qianqian	OS21-8
Oh, Jiyoung	PS01-06	Panahi, Farhad	PS03-82
Oh, Jiyoung	PS02-27	Panjeali, Mohsen	PS03-82
Oh, Jiyoung	PS02-30	Paramei, Galina V.	OS05-4
Oh, Semin	PS03-12	Park, Chi-Hu	OS03-7
Oh, Sungmi	OS04-8	Park, DaEun	PS03-14
Oh, Yunmi	PS01-24	Park, Gyu Rim	PS02-15
Ohnishi, Takashi	OS24-5	Park, Hanna	PS01-62
Ohno, Yoshi	OS21-1,2	Park, Hanna	PS01-72
Ohnuma, Kazuhiko	PS02-09	Park, Heykyung	OS17-5
Ohyama, Futoshi	OS07-8	Park, Heykyung	PS01-06
Ojeda, Juan	PS03-30	Park, Heykyung	PS01-09
Okajima, Katsunori	OS19-2	Park, Heykyung	PS02-12
Okajima, Katsunori	OS21-9	Park, Heykyung	PS02-27
Okajima, Katsunori	PS03-58	Park, Heykyung	PS02-30
Okamoto, Ikuko	PS01-78	Park, Huigyeong	PS02-52
Okamoto, Ikuko	PS03-85	Park, Hye Jeong	OS12-4
Okuda, Shino	OS21-9	Park, Jaeryung	PS01-60
Olguntürk, Nilgün	OS14-6	Park, Jiyoung	PS01-13
Olguntürk, Nilgün	OS14-7	Park, Jin-Hyun	PS01-87
Oliveira, Ana Claudia	OS03-5	Park, Jiyoung	PS02-17
Onishi, Yuki	PS03-77	Park, Jiyoung	PS03-11
Or, Kazim Hilmi	OS12-5	Park, Jiyoung	PS03-36
Or, Kazim Hilmi	OS12-8	Park, Jiyoung	PS03-44
Osaka, Mariko	OS23-6	Park, Jiyoung	PS03-45
Osaka, Naoyuki	OS23-6	Park, Jiyoung	PS03-80
Osumi, Masayuki	OS02-6	Park, Jiyoung	PS03-08
Ota, Yudai	OS24-4	Park, JunSu	PS02-34
Otsuka, Chisako	PS03-70	Park, JunSu	PS02-46
Ou, Li-Chen	OS09-1	Park, KiYoung	PS03-62
Ou, Li-Chen	OS13-4	Park, Seongchong	PS03-53
Ou, Li-Chen	OS14-5	Park, Seongjoo	PS02-17
Ouimak, Warisa	OS15-6	Park, Seongjoo	PS03-38

Park, Soo Youl	PS03-46	Ruan, Xiukai	OS10-7
Park, Soo Youl	PS03-47	Ruei-Ju, Hung	OS09-7
Park, Soobeen	PS03-10	Ryu, Ji-seon	PS02-77
Park, Soobeen	PS03-63	Ryu, Ji-seon	PS02-86
Park, Won-Sang	PS02-18	Ryu, Kum-hee	PS01-58
Park, Won-Sang	PS02-65	Ryu, Seung Hwan	OS03-7
Park, YungKyung	PS02-37	Ryu, Seungwon	PS02-36
Park, YungKyung	PS01-21	Ryu, Seungwon	PS02-69
Park, YungKyung	PS01-39	Ryu, Uh-Chan	PS03-33
Park, YungKyung	PS01-44	Ryu, on chan	1303 33
Park, YungKyung	PS01-47	S	
Park, YungKyung	PS01-60		000
	PS01-63	Safdar, Muhammad	OS07-7
Park, YungKyung	PS01-65	Safi, Mahdi	OS19-1
Park, YungKyung	PS01-68	Sagawa, Ken	OS13-7
Park, YungKyung		Saito, Daiki	OS15-4
Park, YungKyung	PS01-71	Saito, Daiki	OS15-5
Park, Yunsun	PS02-51	Saito, Miho	PS03-13
Peng, Henian	PS02-23	Sakai, Hideki	OS19-4
Perales, Esther	OS10-3	Sakata, Katsuaki	PS03-22
Perales, Esther	PS03-61	Sakaue, Koichi	OS24-4
Perz, Malgorzata	PS03-39	Sakonkharuehadet, Roongnapa	OS15-6
Petrulis, Andrius	0S21-3	Sasaki, Kazuya	OS09-6
Pyo, Yeonhee	PS01-32	Sato, Hirayuki	OS09-3
		Sato, Tetsuya	OS05-8
Q		Sato, Tetsuya	OS15-3
Qiu, Jueqin	OS04-1	Savitskaya, Anna	PS03-31
Qiu, Jueqin	OS10-1,2	Schindler, Verena M	OS06-3
Qiu, Jueqin	OS16-3	Sekulovski, Dragan	PS03-39
		Seo, Eunhye	PS01-47
R		Seo, EunJi	PS02-21
Radsamrong, Anukul	OS12-7	Seo, EunJi	PS02-36
Rangel, Nallely	OS20-7	Seo, EunJi	PS02-69
Rangel, Nallely	OS24-6	Seo, EunJi	PS02-72
Rattanakasamsuk, Kitirochna	PS01-53	Seo, EunJi	PS03-42
Ren, Boxuan	PS03-52	Seo, EunJi	PS03-80
Rhodes, Peter A	OS22-3	Seo, EunJi	PS03-84
Richard, Nöel	PS03-60	Seo, EunJi	PS03-40
Richter, Klaus	OS07-6	Seo, Hyo Hyun	OS03-7
Rizzi, Alessandro	PS03-49	Seo, MinJung	OS03-3
Roh, Jin Sang	PS02-73	Seo, Minjung	PS01-22
Rolland, Nicolas	OS09-9	Seo, Young-Jun	PS02-18
Romero, Javier	PS03-30	Seo, Young-Jun	PS02-65
Romero, Javier	PS03-66	Serra-Lluch, Juan	OS03-4
Roshan, Emitis	OS10-6	Shamey, Renzo	OS14-4
Rossi, Maurizio	OS21-7	Shamey, Renzo	PS01-59
			. 231 37

Shi, Chunjie	OS13-5	Sueeprasan, Suchitra	OS15-6
Shin, Bokyung	PS02-39	Suga, Shigeo	0S19-6
Shin, Dong Jun	PS02-05	Sugioka, Kousuke	PS03-20
Shin, Dong Jun	PS03-55	Suh, Kueesook	PS02-43
Shin, EunGyeong	PS03-10	Suh, Kueesook	PS02-46
Shin, EunGyeong	PS03-63	Suh, Yeonwon	PS01-86
Shin, EunKyung	PS01-80	Suk, Hyeon-Jeong	OS02-1,2
Shin, Kye-Ok	PS01-07	Suk, Hyeon-Jeong	0S16-7
Shin, SangEun	0S08-8	Suk, Hyeon-Jeong	PS02-01
Shin, SangEun	OS11-4	Suk, Hyeon-Jeong	PS03-86
Shin, SangEun	PS01-17	Suk, Hyeon-Jeong	PS02-80
Shin, SangEun	PS02-49	Suk, Hyeon-Jeong	PS02-81
Shin, SangEun	PS03-62	Suk, Hyeon-Jeong	PS02-82
Shin, SangEun	PS03-65	Suk, Hyeon-Jeong	PS03-01
Shin, Sunyoung	PS01-03	Suk, Hyeon-Jeong	PS02-90
Shin, Tae-Hwa	PS03-08	Suk, Hyeon-Jeong	PS02-91
Shin, Woo Ram	PS03-76	Sun, Pei-Li	0S07-5
Shinoda, Hiroyuki	PS02-22	Sun, Pei-Li	0507 5 0S23-1
Shinomori, Keizo	0S20-6	Szabó, Ferenc	0525 T
Shinomori, Keizo	PS03-18	Szücs, Veronika	0514-5 0516-8
Shinozaki, Masayoshi	0S12-6	32acs, veronika	0310-8
Shishikura, Masami	OS24-4	Т	
Shrader, Stephen	0S01-6	•	DC02 21
Shrestha, Raju	0501-8	Tagaya, Michiru	PS03-21
Sik-Lanyi, Cecilia	0501 8 0S16-8	Tajima, Kenji	OS15-5
Sin, Rok	PS03-17	Takahashi, Shin'ya	OS14-1,2
Singnoo, Jakkarin	OS07-4	Takahashi, Shin'ya	PS03-07
Sivakumar, Keshav	PS03-51	Takahashi, Shin'ya	PS03-15
Smet, Kevin A. G.	0S10-8	Takahashi, Shin'ya	PS03-16
	0S10-6	Tanaka, Midori	OS22-6
Smith, Landry	0S13-4	Tanaka, Midori	PS03-56
Sohn, Kwanghoon		Tanaka, Midori	PS03-57
Son, YeonHong	PS01-33	Tanaka, Midori	PS03-58
Song, Deok-Weon	OS18-6	Tanaka, Satoshi	OS19-6
Song, Hy–Eim	PS03-29	Tanaka, Yuki	PS03-58
Song, January	PS02-87	Tang, Da-Lun	PS01-79
Song, JongHwan	OS08-8	Tantcheva-Burdge, Elza	PS01-45
Song, JungHwa	PS01-82	Tasaki, Masutsugu	OS15-4
Song, Sung-ho	PS01-31	Tasaki, Masutsugu	OS15-5
Song, WenWen	PS01-02	Tashiro, Tomonori	PS02-09
Song, YoungMin	PS01-23	Tashiro, Tomonori	PS03-71
Sorokowski, Piotr	PS03-02	Tatsumoto, Muneto	OS21-9
Souza, Pedro Felipe Pinho	0S04-6	Tetsuya, Sato	OS09-7
Stuker, Florian	OS22-7	Tetsuya, Sato	OS14-5
Sueeprasan, Suchitra	OS14-5	Teunissen, C.	OS13-1,2
Sueeprasan, Suchitra	OS15-3	Theerathammakorn, Supawadee	OS18-5

Trémeau, Alain         O512–7         Westland, Stephen         O504–5           Trémeau, Alain         O518–7         Westland, Stephen         O509–4           Tsuchiya, Nao         P502–09         Westland, Stephen         O509–4           Tsuimura, Sei-ichi         P503–09         Westland, Stephen         O513–6           Tsunetou, Junki         O509–6         Westland, Stephen         O517–7           Westland, Stephen         O517–5         Westland, Stephen         O521–8           Ulusoy, Beglim         O505–6         Winterlaiter, Kati         O508–6           Varichon, Anne         O509–9         Winterlaiter, Kati         O508–1           Varichon, Anne         O509–9         Winterlaiter, Kati         O508–1           Varichon, Anne         O509–9         Winterlaiter, Kati         O508–1           Varichon, Anne         O509–9         Xiao, Kaida         O509–1           Warichon, Anne         O509–9         Xiao, Kaida         O509–2           Wan, Lif	Torres-Barchino, Ana	OS03-4	Westland, Stephen	OS03-1
Tsuchiya, Nao         PS02-09         Westland, Stephen         OS09-4           Tsuintou, Junki         PS03-09         Westland, Stephen         OS17-7           Tsunetou, Junki         OS09-6         Westland, Stephen         OS17-7           Westland, Stephen         OS17-7         Westland, Stephen         PS01-51           Ulusoy, Begüm         OS05-6         Winterhalter, Kati         OS08-6           V         Wor, Sehwa         PS03-02           Wor, Sehwa         PS03-02         Won, Sehwa         PS01-51           Varichon, Anne         OS09-9         Wor, Sehwa         PS02-10           Varichon, Anne         OS09-9         Wor, Sehwa         PS03-13           Vozchikov, Lev         PS03-73         X           Wala, Kaida         OS09-1         Xiao, Kaida         OS09-2           Wan, Lifang         PS03-13         Xiao, Kaida         OS09-2           Wang, Lifang         PS03-18         Xiao, Kaida         OS09-5           Wang, Jiangbo         OS06-4         Xin, John H.         PS03-48           Wang, Jiangbo         OS06-4         Xin, John H.         PS03-48           Wang, Jiangbo         OS06-5         Xu, Haisong         OS10-1,2           Wang, Jiangbo<	Trémeau, Alain	OS12-7	Westland, Stephen	OS04-5
Tsujimura, Sei-ichi	Trémeau, Alain	OS18-7	Westland, Stephen	OS09-2
Tsunetou, Junki	Tsuchiya, Nao	PS02-09	Westland, Stephen	OS09-4
U         Westland, Stephen         OS21-8           Ulusoy, Begüm         OS05-6         Westland, Stephen         PS01-51           V         Winterhalter, Kati         OS08-6           Varichon, Anne         OS09-9         Won, Seahwa         PS01-51           Varichon, Anne         OS09-9         Won, SeHwa         PS02-10           Varichon, Anne         OS09-9         X           Vozchikov, Lev         PS03-73         X           W         Xiao, Kaida         OS03-1           W         Xiao, Kaida         OS09-2           Wakata, Tadayuki         PS03-13         Xiao, Kaida         OS09-5           Wan, Lifang         PS03-18         Xiao, Kaida         OS09-5           Wang, Lifang         PS03-18         Xiao, Kaida         PS03-52           Wang, Ching Liang         OS06-4         Xin, John H.         PS03-52           Wang, Jingbo         OS06-5         Xu, Haisong         OS04-1           Wang, Jingbo         OS06-5         Xu, Haisong         OS10-1,2           Wang, JunWei         PS01-02         Xu, Haisong         OS16-3           Wang, Mengmeng         OS09-5         Xu, Haisong         OS18-4           Wang, Pei-Chen         PS01-7	Tsujimura, Sei-ichi	PS03-09	Westland, Stephen	0S13-6
U         Westland, Stephen         PS01-51           Ulusoy, Beginm         OS05-6         Winterhalter, Kati         OS08-6           V         Won, Seahwa         PS03-02           Varichon, Anne         OS09-9         Won, SeHwa         PS02-10           Varichon, Anne         OS09-9         Witta, Pranciškus         OS21-3         X           Vozchikov, Lev         PS03-73         Xiao, Kaida         OS09-2           W         Xiao, Kaida         OS09-2           Wakata, Tadayuki         PS03-13         Xiao, Kaida         OS09-5           Wan, Lifang         PS03-18         Xiao, Kaida         OS09-5           Wang, Linglaing         OS02-4         Xie, Wanzi         OS22-8           Wang, Jiangbo         OS06-4         Xin, John H.         PS03-48           Wang, Jinghong         OS06-5         Xu, Haisong         OS04-1           Wang, Jinghong         OS06-2         Xu, Haisong         OS10-1,2           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-3           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-3           Wang, Mengmeng         OS19-3         Xu, Haisong         OS16-3           Wang, Pei-Chen         PS01-79<	Tsunetou, Junki	OS09-6	Westland, Stephen	OS17-7
Ultusoy, Begrüm         OS05-6         Winterhalter, Kati         OS08-6           V         Won, Seahwa         PS03-02           Varichon, Anne         OS09-9         Won, SeHwa         PS02-10           Vitta, Pranciškus         OS21-3         X           Vozchikov, Lev         PS03-73         Xiao, Kaida         OS09-2           W         Xiao, Kaida         OS09-2           Wakata, Tadayuki         PS03-13         Xiao, Kaida         OS09-9           Wan, Lifang         PS03-13         Xiao, Kaida         OS09-9           Wang, Ching Liang         OS02-4         Xie, Wanzi         OS22-8           Wang, Jiangbo         OS06-4         Xin, John H.         PS03-48           Wang, Jiangbo         OS06-5         Xu, Haisong         OS10-12           Wang, Jinghong         OS06-5         Xu, Haisong         OS10-13           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-63           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-3           Wang, Mengmeng         OS10-79         Xu, Johnny Jie         OS04-3           Wang, Qing         OS10-79         Xu, Johnny Jie         OS04-3           Wang, Qing         OS10-4         Xu, Peng			Westland, Stephen	OS21-8
Ulusoy, Begüm	П		Westland, Stephen	PS01-51
V V Varichon, Anne Vitta, Pranciškus Vozchikov, Lev VSOzchikov, Lev VXiao, Kaida VSOSO-2 Xiao, Kaida VSOSO-2 Xiao, Kaida VSOSO-5 VAIN, Lifang PSOS-13 Xiao, Kaida VSOSO-5 VAIN, Lifang PSOS-18 Xiao, Kaida VSOSO-5 VAIN, Lifang PSOS-18 Xiao, Kaida PSOS-52 VSOSO-5 VAIN, Lifang PSOS-52 VAIN, Lifang VSOSO-4 Xiao, Kaida VSOSO-5 VAIN, Lifang PSOS-52 VAIN, Lifang VSOSO-4 VAIN, John H PSOS-62 VAIN, Haisong VSO4-1 VAIN, John H PSOS-64 VAIN, Leisong VSO4-1 VAIN, Laisong VSO4-1 VAIN, Laisong VSOSO-2 VAIN, Haisong VSOSO-5 XIA, Haisong VSOSO-1 XIA, Haison		0505-6	Winterhalter, Kati	OS08-6
Varichon, Anne         OS09-9         Won, SeHwa         PS02-10           Vitta, Pranciškus         OS21-3         X           Vozchikov, Lev         PS03-73         Xiao, Kaida         OS09-2           W         Xiao, Kaida         OS09-2           Wakata, Tadayuki         PS03-13         Xiao, Kaida         OS09-4           Wan, Lifang         PS03-18         Xiao, Kaida         OS09-5           Wang, Ching Liang         OS02-4         Xie, Wanzi         OS22-8           Wang, Jiangbo         OS06-4         Xin, John H.         PS03-48           Wang, Jiangbo         OS06-5         Xu, Haisong         OS04-1           Wang, Jinghong         OS06-5         Xu, Haisong         OS10-1,2           Wang, JunWei         PS01-02         Xu, Haisong         OS16-3           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-3           Wang, Mengmeng         OS09-5         Xu, Haisong         OS16-3           Wang, Mengmeng         OS19-3         Xu, Haisong         OS16-3           Wang, Mengmeng         OS19-3         Xu, Haisong         OS16-3           Wang, Qing         OS10-7         Xu, Johnny Jie         OS04-3           Wang, Qing         OS10-7	otusoy, beguiii	030) 0	Witzel, Christoph	PS03-02
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Wang, Qing         OS22-8         Xu, Yang         OS09-2           Wang, Yuzhao         OS22-2         Xu, Yang         OS09-4           Wang, Zhifeng         OS09-2         Y           Wang, Zhifeng         OS09-4         Yaguchi, Hirohisa         OS16-1,2           Watanuki, Keiichi         OS15-4         Yaguchi, Hirohisa         PS03-70           Watanuki, Keiichi         OS15-5         Yaguchi, Hirohisa         PS03-74           Weber, Ralf         OS08-2         Yamada, Yuko         OS01-6           Wei, Minchen         OS11-3         Yamashita, Wakayo         PS03-09           Wei, Minchen         OS22-1         Yamauchi, Yasuki         PS03-71           Wei, Minchen         OS22-2         Yan, Yuchun         PS02-81           Wei, Yuh-Chang         PS01-01         Yan, Yuchun         PS02-82           Wen, Zixin         OS11-3         Yan, Yung-Jhe         OS07-3           Wentworth, Mark         OS17-6         Yanagida, Yoshiko         OS09-6           Westland, Stephen         OS02-5         Yanaka, Mutsumi         OS09-6	Wang, Qing	OS21-4	<u> </u>	0S16-3
Wang, Yuzhao  Wang, Yuzhao  Wang, Zhifeng  Wang, Zhifeng  Watanuki, Keiichi  Watanuki, Keiichi  Weber, Ralf  Wei, Minchen  Wei, Minchen  Wei, Minchen  Wei, Yuh-Chang  Wen, Zixin  Wentworth, Mark  Westland, Stephen  OS22-5  Wang, Yuzhao  OS22-2  Yunyang  Yanyauchi, Hirohisa  PS03-70  Yaguchi, Hirohisa  PS03-70  Yaguchi, Hirohisa  PS03-70  Yaguchi, Hirohisa  PS03-74  Yaguchi, Hirohisa  PS03-74  Yamada, Yuko  OS01-6  Yamashita, Wakayo  PS03-09  Yamauchi, Yasuki  PS03-71  Yan, Yuchun  PS02-81  Yan, Yuchun  PS02-82  Yan, Yung-Jhe  OS07-3  Yanagida, Yoshiko  OS09-6  Yanaka, Mutsumi  OS09-6	Wang, Qing	OS22-8	_	OS09-2
Wang, Yuzhao Wang, Zhifeng OS09-2 Y Wang, Zhifeng OS09-4 Yaguchi, Hirohisa OS16-1,2 Watanuki, Keiichi OS15-4 Watanuki, Keiichi OS15-5 Yaguchi, Hirohisa PS03-70 Watanuki, Keiichi OS15-5 Yaguchi, Hirohisa PS03-74 Weber, Ralf OS08-2 Yamada, Yuko OS01-6 Wei, Minchen OS11-3 Yamashita, Wakayo PS03-09 Wei, Minchen OS22-1 Yamauchi, Yasuki PS03-71 Wei, Minchen OS22-2 Yan, Yuchun PS02-81 Wei, Yuh-Chang PS01-01 Yan, Yuchun PS02-82 Wen, Zixin OS11-3 Yan, Yung-Jhe OS07-3 Wentworth, Mark OS17-6 Yanagida, Yoshiko OS09-6 Westland, Stephen OS02-5 Yanaka, Mutsumi	Wang, Yuzhao	OS22-1	_	OS09-4
Wang, ZhifengOS09-4Yaguchi, HirohisaOS16-1,2Watanuki, KeiichiOS15-4Yaguchi, HirohisaPS03-70Watanuki, KeiichiOS15-5Yaguchi, HirohisaPS03-74Weber, RalfOS08-2Yamada, YukoOS01-6Wei, MinchenOS11-3Yamashita, WakayoPS03-09Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wang, Yuzhao	OS22-2	·	
Watanuki, Keiichi OS15-4 Watanuki, Keiichi OS15-5 Watanuki, Keiichi OS08-2 Weber, Ralf OS08-2 Wei, Minchen OS11-3 Wei, Minchen OS22-1 Wei, Minchen OS22-2 Wei, Yuh-Chang Wei, Yuh-Chang Wen, Zixin Wentworth, Mark OS15-4 Yaguchi, Hirohisa PS03-70 Yaguchi, Hirohisa PS03-74 Yaguchi, Hirohisa PS03-74 Yamada, Yuko OS01-6 Yamashita, Wakayo PS03-09 Yamauchi, Yasuki PS03-71 Yan, Yuchun PS02-81 Van, Yuchun PS02-82 Van, Yuchun PS02-82 Van, Yung-Jhe OS07-3 Vanagida, Yoshiko OS09-6 Vanaka, Mutsumi OS09-6	Wang, Zhifeng	OS09-2	Υ	
Watanuki, KeiichiOS15-4Yaguchi, HirohisaPS03-70Watanuki, KeiichiOS15-5Yaguchi, HirohisaPS03-74Weber, RalfOS08-2Yamada, YukoOS01-6Wei, MinchenOS11-3Yamashita, WakayoPS03-09Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wang, Zhifeng	OS09-4	Yaguchi, Hirohisa	OS16-1,2
Watanuki, KeiichiOS15-5Yaguchi, HirohisaPS03-74Weber, RalfOS08-2Yamada, YukoOS01-6Wei, MinchenOS11-3Yamashita, WakayoPS03-09Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Watanuki, Keiichi	OS15-4	- I	
Weber, RalfOS08-2Yamada, YukoOS01-6Wei, MinchenOS11-3Yamashita, WakayoPS03-09Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Watanuki, Keiichi	OS15-5	• '	
Wei, MinchenOS11-3Yamashita, WakayoPS03-09Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Weber, Ralf	OS08-2		
Wei, MinchenOS22-1Yamauchi, YasukiPS03-71Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wei, Minchen	OS11-3		
Wei, MinchenOS22-2Yan, YuchunPS02-81Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wei, Minchen	OS22-1		PS03-71
Wei, Yuh-ChangPS01-01Yan, YuchunPS02-82Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wei, Minchen	OS22-2	· ·	
Wen, ZixinOS11-3Yan, Yung-JheOS07-3Wentworth, MarkOS17-6Yanagida, YoshikoOS09-6Westland, StephenOS02-5Yanaka, MutsumiOS09-6	Wei, Yuh-Chang	PS01-01		
Wentworth, Mark OS17-6 Yanagida, Yoshiko OS09-6 Westland, Stephen OS02-5 Yanaka, Mutsumi OS09-6	Wen, Zixin	OS11-3		
Westland, Stephen OS02-5 Yanaka, Mutsumi OS09-6	Wentworth, Mark	OS17-6	_ :	
W	Westland, Stephen	OS02-5	_	
	Westland, Stephen	OS02-8		

Yang, Jie	OS03-1	Youyen, Praewpan	OS15-3
Yang, Jie	OS04-5	Yu, Beichen	OS06-7
Yang, Jungsoon	PS03-41	Yu, Eunmi	PS01-25
Yang, SaeRum	PS01-17	Yu, Luwen	OS02-5
Yang, SoYeon	PS01-04	Yu, Luwen	OS04-5
Yang, Zhihui	OS22-8	Yuan, Yinqiu	OS14-5
Yaoi, Ken	0S23-6	Yuan, Yue	OS20-2
Yar, Selin	OS14-7	Yun, Jeongeun	PS03-45
Yata, Noriko	PS03-77		
Ye, Zhengnan	OS04-1	Z	
Yeh, Nan-Ling	PS02-13	Zabiliūtė–Karaliūnė, Akvilė	OS21-3
Yeliseev, Nikolay	PS03-31	Zeng, Yi-Wen	PS03-54
Yeom, Jong-Min	PS03-50	Zhai, Qiyan	OS10-8
Yi, Eunjou	PS01-59	Zhai, Qiyan	0S18-3
Yi, June-Seong	PS01-77	Zhai, Qiyan	OS21-6
Ying, Fangtian	OS18-3	Zhai, Qiyan	OS22-4
Yoo, Bumho	OS03-7	Zhang, Fuzheng	OS18-4
Yoo, EunJi	PS01-44	Zhang, Jingjing	OS22-8
Yoo, Jaekeun	PS03-53	Zhang, Xiandou	OS07-2
Yoo, Jang-Yung	PS02-56	Zhang, Xiandou	OS10-4
Yoon, Choonhee	OS03-7	Zhang, Xueqing	OS04-3
Yoon, Chulsoo	PS03-44	Zhang, Yaoju	OS10-7
Yoon, Chulsoo	PS03-45	Zhao, Binghao	OS09-2
Yoon, Hye-Gyung	PS01-26	Zhao, Binghao	OS09-4
Yoon, Jae-Min	PS02-56	Zhu, Yuechen	OS22-4
Yoon, Ji Young	PS03-05	Zhuang, Yi-Lin	PS02-13
Yoon, Jinsook	PS02-55	Zubair, Muhammad	OS14-4
Yoon, Jiyoung	PS02-54	Žukauskas, Artūras	OS21-3
Yoshimura, Kohji	OS01-6	Zybaczynski, Veronica Maria	OS06-6
Yoshizawa, Yosuke	PS02-41	, ,	_
You, Mee-Ran	PS02-79		

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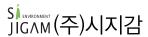












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Chungnam National University	16
ddamy	17
Color Design Research Institute – EWHA WOMANS UNIVERSITY	18
Sigong Tech	19, 30
UCL	20
NCS Colour	21
Konica Minolta, Inc.	22,27
Sungjoo Group, JTO	23,24
Korea Color Universal Design Association	25, 26
BIO-FD&C Co., Ltd	28, 29
Minhwadeco	31

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