



# International Enamellers Congress

Kyoto

May 8<sup>th</sup>-11<sup>th</sup>, 2023

**Program of Events and Activities**

May 2023



It gives me great pleasure to address the 25th International Enamellers' Congress being held in Kyoto, Japan for the first time. I would like to express my deep respect to the International Enamellers Institute and the Japan Enamel Association for their efforts to host this congress and to improve and disseminate enamel expertise.

To all of you who have come here from across Japan and the world, welcome to Kyoto. I would like to extend to you our warmest welcome.

For more than 1200 years, Kyoto has carefully nurtured and protected its traditions and culture, yet Kyoto still continues to develop, turning out one innovation after another. Traditional pottery techniques have led to innovations in ceramics, and sake brewing has led to biotechnology.

Furthermore, Kyoto is a city where knowledge is accumulated, having 36 universities and an abundance of research institutes.

I believe it is extremely significant and of great value that engineers and scientists have gathered from across the globe here in Kyoto today, to deepen your technological and business exchange. I hope that the 25th International Enamellers' Congress will lead to further developments in the porcelain enamel industry.

Kyoto is now in the season of fresh greenery, vivid to the eyes. As you may all be very busy during the congress, I hope you will have the chance to experience the nature, scenery, culture, and many other charms of Kyoto.

In closing, I would like to express my most sincere wishes that the 25th International Enamellers' Congress will be fruitful for all who attend and participate.

Thank you very much!

門川 大作

Daisaku KADOKAWA  
Mayor of Kyoto

第25回を数える国際珐瑯会議が、日本で初めて京都で開催されますことを大変嬉しく思います。開催に御尽力の、国際珐瑯協会並びに日本珐瑯工業会の皆様におかれては、珐瑯の専門知識の向上と更なる普及を目指して貴いお取組を重ねておられます。改めて深く敬意を表します。

そして、日本、世界各地からお越しの皆様、ようこそ京都へ。心から歓迎いたします。

京都は、1200年を超える歴史に育まれてきた伝統や文化をしっかりと守りつつ、数々のイノベーションを繰り返し、発展を続けてきたまち。伝統的な陶器作りはセラミックへ、酒造りはバイオテクノロジーへとそれぞれつながってきました。

また京都は、36もの大学、いくつもの研究機関をはじめとする「知」が集積するまちでもあります。

そんな京都に、世界中から多くの専門家や事業者の方々が集まり、技術・ビジネス交流が深まることを、誠に意義深く感じている次第です。本会議が、珐瑯産業の更なる発展につながることを念じております。

さて、京都は今、新緑が目に見え、鮮やかな季節を迎えています。会期中は皆様大変お忙しいものと存じますが、その合間にぜひ、自然、景観、文化はじめ、京都ならではの魅力に触れていただければ幸いです。

結びに、国際珐瑯会議の御盛会、並びに御参集の皆様の御健勝と御多幸を心から祈念いたします。

2023年5月

門川 大作

京都市長  
門川 大作

May 8, 2023



Thank you very much, everyone, for your patience.  
The 25th International Enamellers Congress, originally scheduled to be held in 2021, will be held finally. During this time, threat of the COVID-19 has shaken the world and must have had a significant impact on your lives.  
The environment surrounding the current enamel industry has been tough. There are many problems to be solved. I

hope this conference will provide those solutions and help the further development of the enamel industry.

As co-sponsors, the Japan Enamel Association and TOMATEC Co., Ltd. made the best possible preparations for the congress, but due to the fluidity of the preparation period, there was no choice but to change the main venue. Many unexpected problems occurred. Please accept my apologies for any inconvenience.

This conference will be the first international congress held in Japan in the history of the IEI.

Kyoto is one of the top tourist destinations in Japan. While it preserves the history and traditional culture of more than 1,200 years as an ancient capital, it is also a place where people and information can gather from all over the world. We hope that you will enjoy the traditional culture of Japan, deepen exchanges through this congress, and hope you have a meaningful time.

In closing, I would like to wish all of you good health and happiness.

高野 幸雄

Yukio Takano  
President  
JAPAN ENAMEL ASSOCIATION

関係者の皆様、大変お待たせ致しました。

2021年に開催予定でした第25回国際珐瑯会議が2年遅れて開催されます。この間、世界中を震撼させた新型コロナウイルスの脅威により皆様の生活にも大きな影響があったのではないのでしょうか。

現在の珐瑯業界を取り巻く環境は、決して安泰なものでは無く、解決すべき問題も山積しております。本会議がこらからの珐瑯業界発展の一助になれば幸いです。

本会議の開催にあたり、日本珐瑯工業会並びにTOMATEC株式会社は共同主催者として精一杯の準備をしてきた心算ですが、準備期間が流動的であったため、メイン会場を変更せざるを得ない等の予期せぬ問題が多発しました。ご迷惑、失礼の段がございましたらお許しください。

本会議はIEIの歴史上始めて、日本で開催される国際会議となります。

又、当地「京都」は、日本でもトップクラスの観光地であり、古都として1200年を超える歴史や伝統文化を守りながらも、世界各国から人や情報が集まる場所でもあります。どうぞ、日本の伝統文化をお楽しみ頂きながら、本会議を通して交流を深め、有意義な時間をお過ごし頂きたいと存じます。

末筆ながら、ご参集の皆様のご健勝並びにご多幸を祈念いたします。

2023年5月8日

高野 幸雄

一般社団法人日本珐瑯工業会  
会長 高野幸雄

## 25th IEI Congress in Kyoto Program of Events and Activities

### Monday, May 8, 2023

15:00 - 17:00	IEI General Meeting (Soushi)
15:00 - 18:00	Congress Registration Open (Taketori)
14:00 - 18:00	Expo Set-up (Kokin)
17:00 - 19:00	Welcome Reception (Taketori)

### Tuesday, May 9, 2023

9:00 - 9:20	Opening
9:20 - 10:40	Technical Program- Session 1-4 Session Chairman: Jörg Wendel (Wendel Email)
11:10 - 12:30	Technical Program- Session 5-8 Session Chairman: Koichi Tanaka (TOMATEC Japan)
9:00 - 15:00	Accompanying Persons - Sightseeing in Kyoto 1 (Bus departs at 9:00 from the front of Hotel Granvia Kyoto)
12:30 - 13:30	Lunch (Taketori, Soushi, Senzai)
13:30 - 14:50	Technical Program-Session 9-12 Session Chairman: Koen Lips (PEMCO Belgium)
15:20 - 16:40	Technical Program-Session 13-17 Session Chairman: Ismail Keskin (Keskin Kimya)
18:00 - 21:00	Dinner- Fortune Garden Kyoto (Buses depart at around 17:30 from the front of Granvia) (Buses back to Granvia at around 21:30)

### Wednesday, May 10, 2023

9:00 - 10:20	Technical Program- Session 18-21 Session Chairman: Charles Baldwin (Vibrantz Technologies)
10:50 - 12:10	Technical Program- Session 22-25 Session Chairman: Yuji Nakazono (Arvos)
9:00 - 15:00	Accompanying Persons - Sightseeing in Kyoto 2 (Bus departs at 9:00AM from the front of Hotel Granvia Kyoto)
12:10 - 13:10	Lunch (Taketori, Soushi, Senzai)
13:10 - 15:40	Technical Program-Session 26-30 Session Chairman: Stewart Hackler (Porcelain Enamel Institute)
15:40 - 16:20	Announcement for the next congress & Closing
18:00 - 21:00	Dinner- Toei Kyoto Studio Park (Buses depart at around 17:30 from the front of Granvia) (Buses back to Granvia at around 21:30)

### Thursday, May 11, 2023

7:00 - 16:20	TOMATEC Komaki Plant (Bus departs at 7:00)
7:00 - 16:30	Takara Standard Nagoya Plant (Bus departs at 7:00)
8:00 - 15:50	TOTO SANITECHNO Shiga Plant (Bus departs at 8:00)
8:00 - 16:10	HANWA HORO (Bus departs at 8:00)
18:00 - 21:00	Closing Dinner - Granvia (Kokin)

### Friday, May 12, 2023

Hotel check-out and departures

## 25th IEI Congress Technical Program Schedule

### Tuesday, May 9, 2023

9:00 - 9:20		Opening / Introduction	
		<b>Session Chairman: Jörg Wendel</b>	<b>Wendel Email</b>
9:20 - 9:40	S1	Innovative enamel coatings with improved mechanical properties by graphene and stainless steel addition Stefano Rossi	- University of Trento
9:40 - 10:00	S2	Processes to ensure adherence and their kinetics at the interface between vitreous porcelain enamels and sheet steel Joachim Deubener	Institute of Non-Metallic Materials - Clausthal University of Technology
10:00 - 10:20	S3	Effects of additives and pigments on electrostatic powder performance Shinichi Kuwae	- TOMATEC Japan
10:20 - 10:40	S4	Very Low Lithium Electrostatic Powder Enamels for Major Appliances Charles Baldwin	- Vibrantz Technologies
10:40 - 11:10		Coffee Break	
		<b>Session Chairman: Koichi Tanaka</b>	<b>TOMATEC Japan</b>
11:10 - 11:30	S5	Limits for Metals – Trace Elements or Poison? Pt.3 Jörg Wendel	- Wendel Email
11:30 - 11:50	S6	Food Contact Approved Cast Iron Enamels Ismail Keskin	- Keskin Kimya
11:50 - 12:10	S7	A New Horizon Direct-on Light Colours Sander Pieters	- PEMCO Belgium
12:10 - 12:30	S8	Characterization of Interaction of Glass Ceramic Coating Surfaces with Municipal Water Nurullah ÇÖPOĞLU	- Akcoat
12:30 - 13:30		Lunch	

		<b>Session Chairman: Koen Lips</b>	<b>PEMCO Belgium</b>
13:30 - 13:50	S9	Ball Mill Optimization Jeffrey R. Hoffmann	- Paul O. Abbe
13:50 - 14:10	S10	RELEASE FROM OBJECTS COVERED WITH PORCELAIN (VITREOUS) ENAMEL Silvia Siliprandi	- CISP
14:10 - 14:30	S11	Development of Hard Particles incorporated High Abrasion Resistant Enamel Coatings Yasin Bozkurt YILMAZ	- Akcoat
14:30 - 14:50	S12	Analytical instrumentation used for determination of release of chemical elements from porcelain enamels Francesco Bitossi	- Colorobbia Italia
14:50 - 15:20		Coffee Break	
		<b>Session Chairman: Ismail Keskin</b>	<b>Keskin Kimya</b>
15:20 - 15:40	S13	Influence of Environmental Humidity on Electrostatic Dry Powder Enamel Spraying and Its Regulation Pengfei Pan	- Qingdao Jobon
15:40 - 16:00	S14	Impact to glass frit by the revision of ISO4531 Kenichi Tsunomori	- TOMATEC Japan
16:00 - 16:20	S15	Regulations for migration tests and limits of toxic elements released from food contact enamelware: Worldwide standards comparison and Evolution in China (Mainland) Weiwei Tang	- Lucky Enamelware
16:20 - 16:40	S16	New development of ISO 4531 compliant Black electrostatic powder Yansong He	- TOMATEC Xiamen

### Wednesday, May 10, 2023

**Session Chairman: Charles Baldwin Vibrantz Technologies**

9:00 - 9:20 S17 Chemical Corrosion and Migration Behaviour of Food Contact  
SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-Na<sub>2</sub>O-ZrO<sub>2</sub> Based Glass-Ceramic Coatings  
İremnur Ceylan - Akcoat

9:20 - 9:40 S18 New ERA of enamel coating equipment & facilities  
Eray ABLUK - STRONG3000

9:40 - 10:00 S19 The manufacture of Architectural enamel panel  
Hanxue Xing - Kaier

10:00 - 10:20 S20 Glass Hydrolysis Modeling and Its application in High Durability  
Porcelain Enamel Design  
Yunxin Gu - Vibrantz Technologies

10:20 - 10:50 Coffee Break

**Session Chairman: Yuji Nakazono Arvos**

10:50 - 11:10 S21 Porcelain Enamel: Programmed Immortality  
Roberto Spaggiari - CISP

11:10 - 11:30 S22 Microstructure and properties of high-strength cold-rolled double-  
sided enamel steel  
Yi Zhang - Ma'anshan Iron and Steel

11:30 - 11:50 S23 Sustainable pretreatment solutions for improved profitability and  
reduced CO<sub>2</sub> footprint  
Brandon Lloyd - Atotec

11:50 - 12:10 S24 Roller kilns for burner caps and cast iron pots  
Paolo Colombo - Trasmetal

12:10 - 13:10 Lunch

**Session Chairman: Stewart Hackler Porcelain Enamel Institute**

13:10 - 13:30 S25 Porcelain Enamel Design for Kitchen Parts  
Toshiki Kawai - Takara standard

13:30 - 13:50 S26 Benefits of substituting borax pentahydrate with anhydrous borax  
in enamel glaze production  
Kee Lung - Rio Tinto

13:50 - 14:10 S27 Atmosphere composition monitoring in enamelling furnace by  
using HELIOS MAGMA: Electrolux Italia experience  
Serena Corsinovi - LETOMEC

14:10 - 14:30 S28 PROCESS AND QUALITY CONTROL SOFTWARE FOR COATING LINES  
Yahya Keskin - Keskin Kimya

14:30 - 14:50 S29 Development Of Colored Majolica Enamel Frit On Enamel Quality  
Cast Iron Materials  
Ahmed Husrev Isbilir Orhan Şahii - Algotrio Kimya

14:50 - 15:20 Coffee Break

15:20 - 15:40 S30 Effect of Surface Treatment on Hydrogen Permeability Behavior of  
Enamel Steel  
Ramazan Uzun - Eregli Iron and Steel Works

15:40 - 16:00 Presentation by next Congress' host

16:00 - 16:20 Closing

### Expo table exhibitors

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Akcoat  
Algotrio Kimya  
Atotech  
Brico  
Filinox  
FUJI HORO  
Jiangxi Jinhuan Pigments  
Keskin Kimya  
Noda Horo  
PEMCO Belgium  
Qingdao Jobon  
STRONG3000  
Takara standard  
TOMATEC  
Trasmetal  
Vibrantz Technologies  
Wendel Email

### Hospital information (Near Hotel Granvia Kyoto)

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Koseikai Takeda Hospital  
Telephone number: 075-361-1351

English and Chinese are available.  
Open 24 hours a day, 365 days a year

Go to the following website for more details,  
<https://www.takedahp.or.jp/koseikai/>

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