

## International Symposium on Upcoming Prominent ENgineering solutions

September 29, 2023

Online, The Japan Society for Precision Engineering (JSPE)

The International Symposium on Upcoming Prominent ENgineering solutions (ISUPEN) will be held online on September 29, 2023. The symposium aims to strengthen cooperation with related overseas organizations and further promote the internationalization of JSPE. In this symposium, innovative R&D activities of researchers and engineers in the field of precision engineering will be introduced to reveal prominent engineering solutions for various recent social issues. The direction in which precision engineering should move toward to form an international community in the future will also be discussed. The symposium will consist of a special talk, 4 keynote lectures and 14 invited talks.

Registration FREE



Japan Time  
(GMT+9:00)

9:00

### Opening address and Introduction to ISUPEN



#### Dr. Kazutoshi Katahira

Chairman of International Affair Committee of JSPE  
Senior Research Scientist  
RIKEN  
Japan

9:05

### Special talk: Message from the president of JSPE



#### Dr. Makoto Fujishima

President of JSPE  
Vice President  
DMG MORI CO., LTD.  
Japan

9:15

### Keynote 1: *Courage to step into a new realm to be a global precision engineer*



#### Prof. Masakazu Soshi

Professor  
University of California Davis  
U.S.A.

**Session1:**

**Think about “how to make micro-structure (texture)”,  
“how to analyze them” and “phenomena at the interfaces”**

9:45

***Texturing for biomaterials and its application to enhance  
surface function***



**Prof. Masayoshi Mizutani**

Professor  
Tohoku University  
Japan

10:05

***Engineering and measuring systemic multi-organ  
interactions***



**Prof. Yi-Chin Toh**

Associate Professor  
The Queensland University of Technology  
Australia

10:25

***Recent Advance and Future Potential in Synchrotron X-ray  
Tomography***



**Prof. Wataru Yashiro**

Professor  
Tohoku University  
Japan

10:45

**Break**

**Session2: How can we understand “what is happening” during the metal cutting process?**

11:00

***Direct observation of plastic deformation behavior in metal cutting process*****Prof. Tatsuya Sugihara**Associate Professor  
Osaka University  
Japan

11:20

***Surface integrity estimation in end milling by utilizing model-based inverse analysis of cutting force*****Prof. Norikazu Suzuki**Professor  
Chuo University  
Japan

11:40

***Complex plastic flows and the simulation of machining of ductile polycrystalline aggregates*****Prof. Narayan K Sundaram**Associate Professor  
Indian Institute of Science  
India

12:00

**Keynote 2:*****Visions of Korean Society for Precision Engineering (KSPE): Smart & Green*****Prof. Sang Won Lee**Professor  
Sungkyunkwan University  
South Korea

12:30

Lunch time

**Session 3:****JSPE Affiliate session****– frontier research of JSPE young researchers –**

13:10

***Vision of deployment of automated driving vehicles and their validation*****Dr. Masao Nakagawa**

Researcher  
National Traffic Safety and Environment Laboratory  
Japan

13:30

***Plasma-electrolysis hybrid process for micro-/nano-structuring applications*****Prof. Yonghua Zhao**

Associate Professor  
Southern University of Science and Technology  
China

13:50

***Vacuum pressure measurements through the use of laser and dimensional measurement techniques*****Dr. Yoshinori Takei**

Senior Researcher  
National Institute of Advanced Industrial Science and Technology  
(AIST)  
Japan

14:10

***Microsensors: A New Toolkit for Understanding Cellular Metabolism*****Professor Ganesh Kumar Mani**

Research Assistant Professor (Former JSPS Fellow)  
Korea Advanced Institute of Science and Technology (KAIST)  
South Korea

14:30

***Highly efficient slurryless electrochemical mechanical polishing of SiC wafers*****Professor Yang Xu**

Associate Professor  
Xi'an Jiaotong University  
China

14:50 Break

15:00 **Keynote 3:** *AI-powered OCD metrology on high aspect ratio structures in semiconductor manufacturing*



**Prof. Liang-Chia Chen**

Professor  
National Taiwan University  
Taiwan

**Session 4:** **Prominent technologies for industrial x-ray CT**

15:30 *Trend of industrial x-ray CT and its applications*



**Prof. Yukie Nagai**

Associate Professor  
Tokyo Metropolitan University  
Japan

15:50 *XXL-CT – a holistic 3D object capture method for valuable insights*



**Dipl.-Ing. Michael Salamon**

Group Leader  
Fraunhofer IIS  
Germany

16:10 *Data and software challenges in X-ray CT*



**Dr. Richard Boardman**

Principal Scientist  
University of Southampton  
U.K.

16:30 **Keynote 4:** *Brief introduction of euspen and current research activities of Bremen University (LFM)*



**Dr.-Ing. Oltmann Riemer**

Group Leader of Laboratory for Precision Machining (LFM)  
Leibniz Institute for Materials Engineering - IWT  
Germany

17:00 **Closing**

### Organizing committee

Chair

<b>Kazutoshi Katahira</b>	RIKEN
<b>Yukie Nagai</b>	Tokyo Metropolitan University
<b>Soo Hyeon Kim</b>	The University of Tokyo
<b>Ryo Koike</b>	Keio University
<b>Daisuke Matsuura</b>	Tokyo Institute of Technology
<b>Masayoshi Mizutani</b>	Tohoku University
<b>Masakazu Soshi</b>	University of California Davis
<b>Tatsuya Sugihara</b>	Osaka University

### Co-sponsors

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