

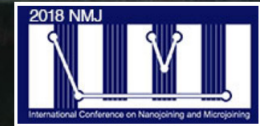
NMJ2018

4th International Conference on Nanojoining and Microjoining 2018

December 2-5, 2018

Todaiji Culture Center(Todaiji Museum)

NARA, JAPAN



Final Program

4th International Conference on Nanojoining and Microjoining 2018 (NMJ2018)

December 2- 5, 2018

Todaiji Culture Center (Todaiji Museum)

Nara, Japan



ORGANIZED BY

- Micro Joining Committee of Japan Welding Society



SUPPORTED BY

- University of Waterloo, Canada



- Empa-Swiss Federal Laboratories for Materials Science and Technology, Switzerland



- Tsinghua University, China



- Joining and Welding Research Institute, Osaka University, Japan



- Course of Manufacturing Science, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan



Welcome to 4th International Conference on Nanojoining and Microjoining 2018 (NMJ2018)

On behalf of the organizing committee, we would like to welcome you to 4th International Conference on Nanojoining and Microjoining 2018 (NMJ2018). Following the successful conclusion of the 1st conference in Beijing, China in December 2012, the 2nd conference in Emmetten, Switzerland in December 2014, and the 3rd conference in Niagara Falls, Canada in September 2016, we have decided to proceed with a 4th conference in Nara from December 2 to 5, 2018.

Key technologies in the fields of e.g. micro-electronics, medical implants, sensing devices and packaging have an urgent need for advanced joining technologies to integrate, package and assemble nano- and micro-scale materials and components at ever-lower temperatures. While microjoining has already become one of the most critical technical prerequisites in the manufacturing of micro-devices and micro-systems, many technological advancements are still needed to allow faster and more reliable fabrication, continuing miniaturization and further cost reduction. The field of nanojoining is also evolving rapidly and is expected to become a key technology for the large-scale production and commercial application of nano-devices and nano-systems in the coming decades.

The conference provides a platform for scientific and industrial discussion and exchange in the emerging fields of nano and micro joining technologies, as follows:

- Joining for integration of nano-/micro-scale materials and devices
- Micro joining for assembly of implantable medical devices
- Method development for nano/micro joint characterization
- Mechanisms and materials science of nano-/micro joining
- Process issues in nano/micro joining

Finally, we would like to sincerely express our gratitude to all the keynote speakers, invited speakers, presenters, participants and sponsors for irreplaceable support and cooperation.

December 2, 2018



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Conference Chair



Anming Hu
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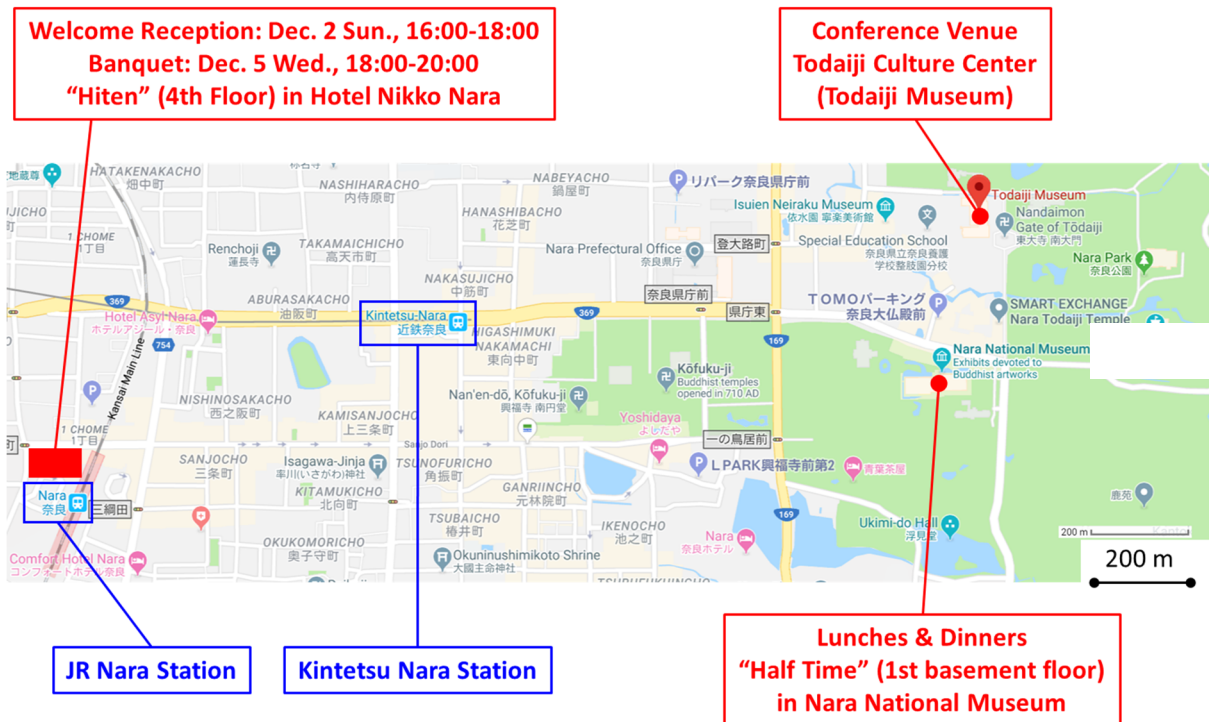
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MAP



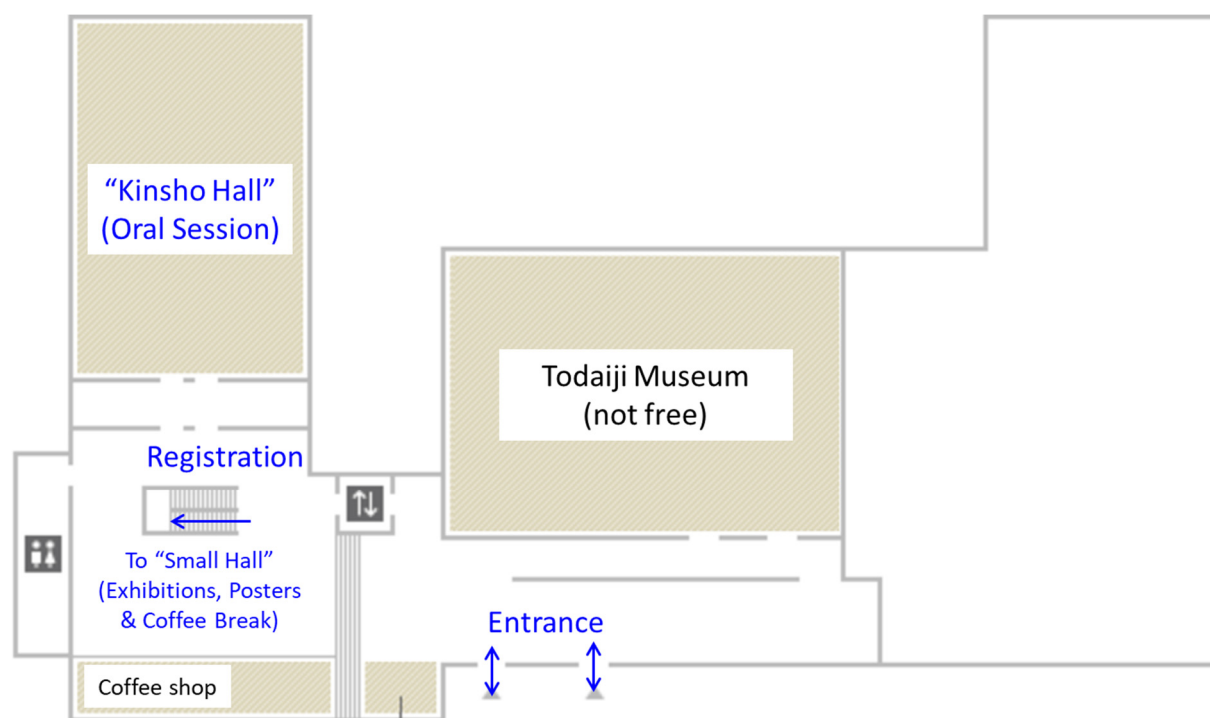
BUS SERVICES

Bus services have been arranged to bring delegates from Hotel Nikko Nara to Conference Venue in the mornings of Dec. 3, 4, and 5, and from Conference Venue to Hotel Nikko Nara in the evening of Dec. 5. There are two kinds of departure times, earlier and later, for each service. Please arrange your own transport if you have missed the bus. There is no bus service in the evenings of Dec. 3 and 4. A summary table of all assembly times is shown below.

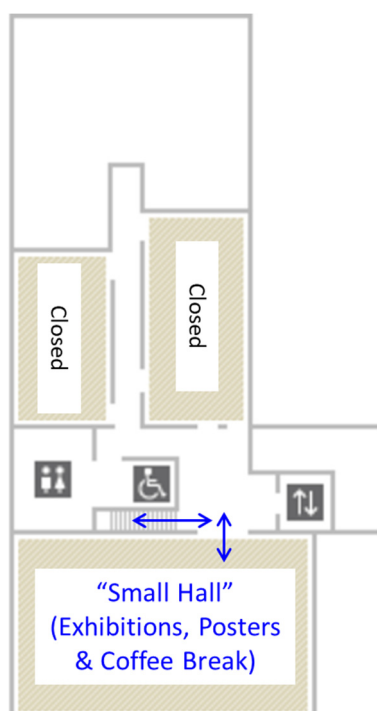
From	To	Dec. 3, Mon	Dec. 4, Tue	Dec. 5, Wed
Hotel Nikko Nara Meeting place: Hotel Lobby on 3rd Floor	Conference Venue	#1. 7:50 #2. 8:20	#1. 7:20 #2. 7:50	#1. 7:20 #2. 7:50
Conference Venue Meeting place: Registration desk	Hotel Nikko Nara	no service	no service	#1. 16:50 #2. 17:20

FLOOR MAP in Todaiji Culture Center

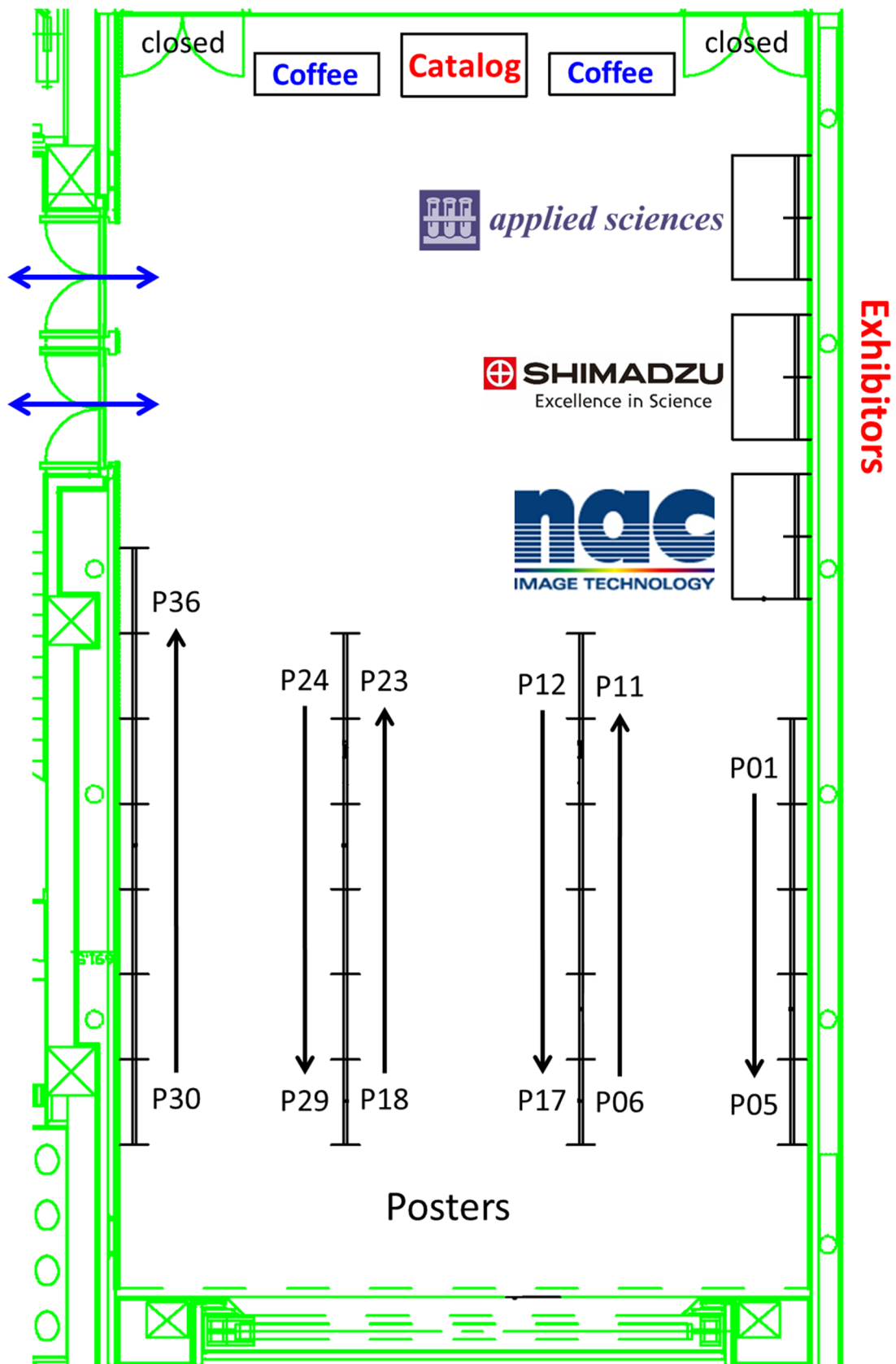
1st floor



1st basement floor



Layout in Small Hall



SOCIAL PROGRAMS

WELCOME RECEPTION

(December 2, Sunday, 16:00 – 18:00)

Welcome Reception will be held on December 2 Sunday from 16:00 to 18:00 in the banquet room "Hiten" located in the 4th floor of Hotel Nikko Nara.

Registration desk will be open in front of the banquet room during the reception.

BANQUET

(December 5, Wednesday, 18:00 – 20:00)

Banquet will be held on December 5 Wednesday from 18:00 to 20:00 in the banquet room "Hiten" located in the 4th floor of Hotel Nikko Nara.

LUNCHES & DINNERS

Lunches on December 3, 4 and 5 and Dinners on December 3 and 4 will be served in the cafeteria "Half Time" located in the first basement floor of Nara National Museum. It will take around 10 minutes on foot between Todaiji Culture Center and Nara National Museum.

KEYNOTE SPEAKERS

Dr. Thomas Brunschwiler, IBM Research - Zurich (Switzerland)



Thomas Brunschwiler is a research staff member of the Smart System Integration team at IBM Research (Zurich). He conducts physical research and coordinates governmental (e.g. HyperConnect, CarriCool) and joint projects. In this respect he is pushing the frontiers in mobile health interventions and establishing an integrated chronic disease management platform with the aim to record patient symptoms continuously, predict and prevent acute events, and provide personalized coaching to support patients to manage their everyday lives. Thomas Brunschwiler received his Ph.D. in Electrical Engineering at the Technical University of Berlin. He received his Master's degree in Microsystem technology from the Interstate University of Applied Science Buchs in 2001. He joined IBM Research in 2001, functional electronic packaging activity. He has authored and co-authored over 80 publications, three book chapters and over 65 patents. He has received six best paper awards at ITherm, SEMI-THERM and from the Journal of Electronic Packaging, and was honored in 2009. He is currently the general chair of ITherm and serves on the board of the Swiss Physical Society and the Board of Governors of the IEEE CPMT Society.

Prof. Norihisa Miki, Keio University (Japan)



Norihisa Miki is a professor of Department of Mechanical Engineering, Keio University. He received Ph.D. in mechano-informatics from University of Tokyo in 2001. Then He worked at MIT microengine project as a postdoctoral associate and later as a research engineer. He joined Department of Mechanical Engineering at Keio University in 2004 as an associate professor and became a full professor in 2017. His research interests include micro/nano biomedical devices and information communication technologies (ICT). He was a researcher of JST PRESTO from 2010 to 2016 and Kanagawa Institute of Industrial Science and Technology (formerly, Kanagawa Academy of Science and Technology). He is a general chair of the JSME 8th and 9th Symposium on Micro Nano Science and Technology in 2017 and 2018. He co-founded a healthcare startup, LTaste Inc., in 2017.

Prof. Craig B. Arnold, Princeton University (USA)



Craig B. Arnold is a professor of Mechanical and Aerospace Engineering at Princeton University and the Director of the Princeton Institute for Science and Technology of Materials. His research ranges from basic science to applied technology aimed at developing a deeper understanding of fundamental materials synthesis and processing with interests in energy storage systems, laser materials processing and advanced optics. He earned his PhD. in condensed-matter physics from Harvard University, and was an NRC post-doctoral fellow prior to joining the faculty at Princeton. Previous awards include the ONR young investigator award and the NSF Career award and more recently, his work in high-speed variable focus optics won an R&D 100 award, the Laser Focus World-OSA technology innovation award, the SPIE PRISM award for photonics innovation, and the Thomas Edison Patent Award. He is a fellow of OSA and SPIE.

Prof. Jae-Pil Jung, University of Seoul (South Korea)



Professor Jae Pil Jung is a Professor of Materials Science and Engineering with the Department of Materials Science and Engineering at the University of Seoul, and the current President of Korean Association of Micro-Electronics Packaging. Professor Jung's research interests are in interconnection materials and electronics packaging processes for semiconductor, electronics, car and etc. including soldering & brazing, electro-plating, and other micro-joining processes; and he has worked on microjoining since 1994, specializing on the development of microjoining materials and technologies; and miniaturization of electronic packages. Over the last decade, his research interests have shifted slightly to the use of nanocomposites for improving the properties of lead free solder alloys; and also on the study of failure mechanisms of nanostructured interconnects.

Prof. Min Qiu, Zhejiang University (China)



Min Qiu is a professor of the College of Optical Science and Engineering in Zhejiang University and Westlake University. He received the B.Sc. degree from the Zhejiang University, Hangzhou, China, in 1995. He obtained the Ph.D. degree in Condense Matter Physics from the same university in 1999. He received the second Ph.D. degree in Electromagnetic Theory from the Royal Institute of Technology (KTH), Stockholm, Sweden, in 2001. In 2001 he joined the School of Information and Communication Technology, KTH, as an assistant professor. He became an associate professor in 2005, and a full professor (Professor of Photonics) in 2009. He was a fulltime professor at the College of Optical Science and Engineering in Zhejiang University (2010-2018) and the director of State Key Laboratory of Modern Optical Instrumentation Zhejiang University (2015-2018). He is now a fulltime professor in Westlake University. His research interest is mostly on nanophotonics, including photothermal conversion and its applications, nanofabrication technology (including advanced e-beam lithography, nanojoining). He has published over 200 international refereed journal papers and delivered more than 60 plenary/keynote/invited talks in international conferences. He has an h-index of 44. He is a fellow of the Optical Society of America (OSA), a fellow of the International Society for Optics and Photonics (SPIE) and a fellow member of the Institute of Electrical and Electronics Engineers (IEEE).

Prof. Walter W. Duley, University of Waterloo (Canada)



Prof. Walter Duley holds a B. Eng. Degree from McGill University and PhD and DSc degrees from Imperial College and the University of London. He is currently Professor of Physics and a faculty member in the Centre for Advanced Materials Joining at the University of Waterloo. He has written four books on laser applications and is the author of many patents and 450 scientific and engineering publications. Professor Duley is the founder and former chairman of Powerlasers Limited, now a part of ArcelorMittal. He is a Fellow of the Laser Institute of America and was awarded the Arthur L. Schawlow prize in 2001 for his work on the development of laser applications in industry. His current research is focussed on studies of the effects of ultra-short pulse laser radiation on the optical and electronic properties of materials and on laser-induced nanojoining. He is also developing new techniques for the preparation and characterization of nanowire and nanoparticle systems.

NMJ2018 Program at a Glance					
	Dec. 2, Sun	Dec. 3, Mon	Dec. 4, Tue	Dec. 5, Wed	
8:30			Registration	Registration	8:30
9:00		Registration	K03_Craig B. Arnold 13_Anming Hu	K05_Min Qiu 23_Luisa D'Urso	9:00
		Opening Remark	14_Yanhong Tian	24_Luchan Lin	
10:00		K01_Thomas Brunschweiler I01_Fabian Menges	15_Bastian Rheingans Coffee Break in Small Hall	25_Genwang Wang Coffee Break in Small Hall	10:00
11:00		01_Shinji Fukumoto 02_Lei Liu 03_Maria Elena Fragalà 04_Qiang Li	I03_Yasuo Takahashi 16_Chihiro Iwamoto 17_Joanna Lipecka 18_Qi An	I05_Wataru Watanabe 26_Yongde Huang 27_Jin Yang 28_Chenxi Wang	11:00
12:00		Group Photo Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	Group Photo Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	12:00
13:00					13:00
14:00		K02_Norihisa Miki 05_Zhiyong Gu 06_Hiroshi Nishikawa 07_Songbai Xue 08_Hiroaki Tatsumi	K04_Jae-Pil Jung I04_Yunhui Mei 19_Toshio Sakai 20_Lars Dörner 21_Bin Feng	K06_Walter Duley I06_Yongfeng Lu 29_Jianlei Cui 30_Zeyad A. Almutairi 31_Ming Xiao	14:00
15:00		Coffee Break in Small Hall	22_João Pedro Oliveira	32_Peng Peng 33_Soshu Kiriara	15:00
16:00		Registration & Welcome Reception in "Hiten" (4th Floor) @ Hotel Nikko Nara	Poster Session* in Small Hall with Coffee	Closing Remark	16:00
17:00		I02_Teichi Ando 09_Cancellieri Claudia 10_Hongjun Ji 11_Jing-Ye Juang 12_Tomoki Matsuda		Transfer to Hotel Nikko Nara	17:00
18:00					18:00
19:00		Dinner in "Half Time" @ Nara National Museum	Dinner in "Half Time" @ Nara National Museum	Banquet in "Hiten" (4th Floor) @ Hotel Nikko Nara	19:00

Poster Session* in the evening of Dec. 4: For all poster presenters, please stand in front of your posters to explain them for participants.

Poster[#] during Lunch time: Participants can look at posters. Poster presenters do not necessarily have to stand in front of their posters.

Special Events	Keynote	Invited	Presentations
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PROGRAM

December 2, Sunday, 2018

16:00		Registration & Welcome Reception in "Hiten" (4th Floor) @ Hotel Nikko Nara
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December 3, Monday, 2018

9:40		Opening Remark
		Session Chair: Jolanta Janczak-Rusch, Empa (Switzerland)
10:00	K01	[Keynote] Nanoparticle based Interconnects in Electronic Packaging supporting System-Performance-Scaling Thomas Brunschwiler, IBM Research – Zurich, Switzerland
10:30	I01	[Invited] Scanning probe thermometry and heat conduction across nanoscale contacts Fabian Menges, University of Colorado Boulder, USA
10:50	01	Development in electric resistivity and cross sectional shape of conductive Ag-paste during curing process Shinji Fukumoto, Osaka University, Japan
11:10	02	Moisture Enabled Electricity Generation from Flexible TiO₂ Nanowire Networks Lei Liu, Tsinghua University, China
11:30	03	Fabrication of multifunctional nano-hybrid materials for applications in sensing and catalysis Maria Elena Fragalà, University of Catania and INSTM UdR Catania, Italy
11:50	04	Fabrication of arch nanobridges with nanowelding Qiang Li, Zhejiang University, China
12:10		Group Photo
12:30		Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall
		Session Chair: Guisheng Zou, Tsinghua University (China)
14:00	K02	[Keynote] Implantable micro/nano medical devices Norihiisa Miki, Keio University, Japan

14:30	05	Effect of Nanosolder Addition on Interfacial IMC Formation and Growth in Reflowed Solder Pastes on Cu Substrate Zhiyong Gu, University of Massachusetts Lowell, USA
14:50	06	Effect of Ni into solder on void formation at the interface Hiroshi Nishikawa, Osaka University, Japan
15:10	07	Impacts on SnPbSb solder joint by γ-ray irradiation and thermal cycling Songbai Xue, Nanjing University of Aeronautics and Astronautics, China
15:30	08	High-Temperature Reliability of Transient Liquid Phase Sintering Joints Using Copper-Solder-Resin Composite Hiroaki Tatsumi, Mitsubishi Electric Corporation, Japan
15:50		Coffee Break in Small Hall
		Session Chair: Zhiyong Gu, University of Massachusetts Lowell (USA)
16:20	I02	[Invited] Microstructural Evolution and Microjoining in Kinetic Powder Consolidation Processes Teiichi Ando, Northeastern University, USA
16:40	09	Disorder, phase stability and stress evolution of nano-multilayered coatings upon thermal treatment Cancellieri Claudia, Empa Swiss Federal Laboratories for Materials Science and Technology, Switzerland
17:00	10	Ultrasonic-assisted sintering of Cu@Ag nanoparticles paste in air for chip attachment Hongjun Ji, Harbin Institute of Technology (Shenzhen), China
17:20	11	Copper-to-copper direct bonding on highly (111) oriented nano-twinned copper in N₂ atmosphere Jing-Ye Juang, National Chiao Tung University, Taiwan
17:40	12	SiC direct joining using silver oxide decomposition Tomoki Matsuda, Osaka University, Japan
18:00		Dinner in "Half Time" @ Nara National Museum

December 4, Tuesday, 2018

		Session Chair: Lars P.H. Jeurgens, Empa (Switzerland)
8:50	K03	[Keynote] Plasmonic-Enhanced Welding of Metal Nanowire Networks for Direct Integration of Transparent Conducting Layers on Organic Electronic Devices Craig B. Arnold, Princeton University, USA
9:20	13	Dielectrophoretic manipulation and laser nanojoining of copper nanowires Anming Hu, University of Tennessee, USA
9:40	14	Nickel Ion Bridge Assisted Joining of Silver Nanowire Networks for Transparent Heaters Yanhong Tian, Harbin Institute of Technology, China
10:00	15	Reactive nano-multilayers for joining Bastian Rheingans, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
10:20		Coffee Break in Small Hall
		Session Chair: Jae-Pil Jung, University of Seoul (South Korea)
10:50	I03	[Invited] In-situ Observation of Adhesion Behavior during Ultrasonic Al Ribbon Bonding Yasuo Takahashi, Osaka University, Japan
11:10	16	Microstructure of Joint between Stranded Wire and Substrate bonded by Ultrasonic Welding Chihiro Iwamoto, Ibaraki University, Japan
11:30	17	Melting behaviour of the nanostructured Al-Si50at%/AlN system Joanna Lipecka, Warsaw University of Technology, Poland
11:50	18	A Study of Low-Temperature Embrittlement of Bulk Tin-Based Solders Qi An, Harbin Institute of Technology, China
12:10		Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall
		Session Chair: Chihiro Iwamoto, Ibaraki University (Japan)
14:00	K04	[Keynote] Ultra-low alpha particle solder for high density electronics packaging Jae-Pil Jung, University of Seoul, South Korea
14:30	I04	[Invited] Pressureless Sintering of Hybrid-silver Paste on Substrates with Nickel Finish Yunhui Mei, Tianjin University, China

14:50	19	Direct Joining of Gold Nanoparticles with Polymer Microspheres Using Ultrasound in Aqueous Media Toshio Sakai, Shinshu University, Japan
15:10	20	Highly-energetic Al/CuO thermites through nanoparticle composites for reactive joining applications Lars Dörner, Empa Swiss Federal Laboratories for Materials Science and Technology, Switzerland
15:30	21	A novel near room temperature interconnection technology by deposited nanoparticle layer Bin Feng, Tsinghua University, China
15:50	22	Dissimilar laser welding of shape memory alloys João Pedro Oliveira, New University of Lisbon, Portugal
16:10		Poster Session* in Small Hall with Coffee
18:00		Dinner in "Half Time" @ Nara National Museum

December 5, Wednesday, 2018

		Session Chair: Lei Liu, Tsinghua University (China)
8:50	K05	[Keynote] Laser-induced Targeted Nanowelding, Nanosoldering, Nanobreaking and Nanohealing of Metallic Nanowires Min Qiu, Zhejiang University, China
9:20	23	Hybrid nanostructures of metal/one-dimensional carbon allotropes prepared by laser ablation in liquid Luisa D'Urso, University of Catania, Italy
9:40	24	Controlled directional mass transportation in metal nanolayer confined structures for devices integration Luchan Lin, Empa Swiss Federal Laboratories for Materials Science and Technology, Switzerland
10:00	25	Nanoscale sintering of Cu nanoparticles under electron beam: a molecular dynamics simulation study Genwang Wang, Harbin Institute of Technology, China
10:20		Coffee Break in Small Hall
		Session Chair: Giuseppe Compagnini, University of Catania (Italy)
10:50	I05	[Invited] Ultrashort laser welding of similar and dissimilar materials Wataru Watanabe, Ritumeikan University, Japan
11:10	26	Study on interface characteristics of microlaser joints of NiTi and stainless steel with Ni filler Yongde Huang, Nanchang Hangkong University, China
11:30	27	Interfacial Strengthening of Laser Al/steel joints by Liquid Zn Penetration Jin Yang, Shanghai University of Engineering Science, China
11:50	28	Direct Heterogeneous Bonding Using VUV Surface Activation in Humid Air Chenxi Wang, Harbin Institute of Technology, China
12:10		Group Photo
12:30		Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall
		Session Chairs: Anming Hu, University of Tennessee (USA) Wataru Watanabe, Ritsumeikan University (Japan)
14:00	K06	[Keynote] Common Mechanisms and Similarities in Laser Joining in Nanoscale and Macroscale Systems Walter Duley, University of Waterloo, Canada

14:30	I06	[Invited] Two-photon polymerization for three-dimensional assembly of aligned carbon nanotubes Yongfeng Lu, University of Nebraska Lincoln, USA
14:50	29	Interconnect between carbon nanotubes and metal electrodes by femtosecond laser irradiation Jianlei Cui, Xi'an Jiaotong University, China
15:10	30	Rapid joining of single-walled carbon nanotube ropes by femtosecond laser irradiation Zeyad A. Almutairi, King Saud University, Saudi Arabia
15:30	31	Interface Engineering for Metal Oxide Nanowire Devices Ming Xiao, University of Waterloo, Canada
15:50	32	Photon-induced reaction and joining of copper nanoparticles Peng Peng, Beihang University, China
16:10	33	Stereolithographic Micro Additive Manufacturing of Solid Electrolytes for Energy Storage Soshu Kirihaara, Osaka University, Japan
16:30		Closing Remark
18:00		Banquet in "Hiten" (4th Floor) @ Hotel Nikko Nara

Poster Session* in the evening of Dec. 4:

For all poster presenters, please stand in front of your posters to explain them for participants.

Poster# during Lunch time:

Participants can look at posters. Poster presenters do not necessarily have to stand in front of their posters.

Poster Presentations

P01	Water based polypyrrole-polyurethane composite ink for E-textile wearable electronics Pengxiang Si, University of Waterloo, Canada
P02	Anisotropic large grain growth in direct copper-to-copper bonding by highly (111) nanotwinned Cu Chih Chen, National Chiao Tung University, Taiwan
P03	Fabrication of Cu EMI shielding layer and its properties for electronic devices Do hyun Jung, University of Seoul, South Korea
P04	Low temperature Transient Liquid Phase joining technology for thermoelectric skutterudites junction Sri Harini Rajendran, University of Seoul, South Korea
P05	Influence of Surface State on Micro-welding Characteristics of Copper by Pulsed Laser Yasuhiro Okamoto, Okayama University, Japan
P06	Investigation of using Femtosecond Laser System for Joining AgNo3 Nanoparticles Mosaad Alanazi, King Saud University, Saudi Arabia
P07	Micro Joining Assisted With Reactive Multilayer Nanofoils Ignited By Joule Heat Cheng Luo, Shanghai Jiao Tong University, China
P08	Metallic Nanoporous Membranes for Broadband High-Performance Light Absorption Wenzheng Zhao, Tsinghua University, China
P09	Integration of similar and dissimilar nanowires by femtosecond laser induced joining Ming Xiao, University of Waterloo, Canada
P10	Sintering of silver nanoparticles using sodium chloride solution, laser and their combination Xinda Wang, Beihang University, China
P11	Self-sintering of Al/Fe₂O₃ Nanothermites for Deflection Sensitive Sensor Anming Hu, University of Tennessee, USA
P12	Nano-Transient liquid phase bonding of Inconel 718 with Ni and Ni-Mn-Fe-Co-Cu High Entropy Alloy Nanoparticles Anming Hu, University of Tennessee, USA
P13	Self-powered fast brazing of Ti-6Al-4V using Ni/Al Reactive Multilayer Films Anming Hu, University of Tennessee, USA

P14	Development of Ultrasonic Bonding Technique using Plastic Flow of Solder as Cushioning Material for Joining of Cu microwire and LED Device to Realize E-textile Kazushi Matsuoka, Osaka University, Japan
P15	Multilevel Current Amplification Memory Effect Induced by UV-Light in Zinc Oxide Rods Memristors Paola Russo, University of Waterloo, Canada
P16	Effect of Ni Addition on Tensile and Fatigue Properties of Sn-Sb Alloy Tatsuya Kobayashi, Gunma University, Japan
P17	Effects of thermal fatigue on ultrasonic-bonded copper joints Takahito Fushimi, Osaka University, Japan
P18	Mechanism of Ag-to-Si bonding using silver oxide paste Kota Inami, Osaka University, Japan
P19	Cu-to-Cu Bonding using Submicron CuO Particles Tomoya Igarashi, Osaka University, Japan
P20	Synthesis and Applications of Magnetite Mesocrystals Hiroya Abe, Osaka University, Japan
P21	Erosion Resistance Properties of Iron-carbon Composite Plating to Molten Lead-free Solder Jun Watanabe, Nagano Oki Electric Co., Ltd., Gunma University, Japan
P22	Study on the reliability of Sn50Pb49Sb1/Cu solder joints subjected to γ-ray irradiation Jianhao Wang, Nanjing University of Aeronautics and Astronautics, China
P23	Mechanical property of Sn-58Bi solder paste containing unsaturated polyester resin Lu Liu, Nanjing University of Aeronautics and Astronautics, China
P24	Dissimilar laser brazing of aluminum alloy and magnesium alloy using interlayer Tomo Ogura, Osaka University, Japan
P25	Melting and Boiling Points and Chemical Bonding Properties of the P-Block Metals Wataru Takahara, Osaka University, Japan
P26	Reactive wetting behavior of Sn-based micro-solder on Cu and Ni capillary tracks Samuel Griffiths, University of Stuttgart, Germany
P27	Microstructural evolution of Cu/W nano-multilayer filler metal during thermal treatments and its application in diffusion brazing process Zengcheng Xing, Beijing University of Technology, China

P28	Microstructure of LPSO type Mg alloy Joints controlled amount of dent that occurred by ultrasonic welding Kazuto Futawatari, National Institute of Technology, Kagoshima College, Japan
P29	Ag precursors as new joining materials for joining of copper at low temperatures Susann Hausner, TU Chemnitz, Germany
P30	Crack repairing on the surface of IN738LC superalloy by TLPB Hailin Bai, Tsinghua University, China
P31	Micro-brazing of Stainless Steel using Ni-P Alloy Plating Shubin Liu, Gunma University, Japan
P32	Residual Stress Analysis in Glass Substrate for Electronic Packaging by Finite Element Method Amon Shinohara, Gunma University, Japan
P33	Direct Heterogeneous Bonding Using VUV Surface Activation in Humid Air Chenxi Wang, Harbin Institute of Technology, China
P34	Laser micro-welding of x-ray antiscatter grid with high aspect ratio for deep space probe Rongshi Xiao, Beijing University of Technology, China
P35	Electrical, Thermal and Mechanical Characteristics of Ag-based Hybrid Circuits Irradiated with Various Energy Sources Kwang-Ho Jung, Sungkyunkwan University, South Korea
P36	Fabrication of Ag-MWCNT Nanocomposite Pastes with Low Temperature Sintering Process Choong-Jae Lee, Sungkyunkwan University, South Korea

Poster Session* in the evening of Dec. 4:

For all poster presenters, please stand in front of your posters to explain them for participants.

Poster[#] during Lunch time:

Participants can look at posters. Poster presenters do not necessarily have to stand in front of their posters.

NMJ2018 Schedule					
	Dec. 2, Sun	Dec. 3, Mon	Dec. 4, Tue	Dec. 5, Wed	
8:30			8:30 Registration	8:30 Registration	8:30
9:00		9:00 Registration	8:50 - 10:20 Oral Session	8:50 - 10:20 Oral Session	9:00
10:00		9:40 - 12:10 Opening Remark & Oral Session			10:00
11:00			Coffee Break in Small Hall	Coffee Break in Small Hall	
12:00			10:50 - 12:10 Oral Session	10:50 - 12:10 Oral Session	11:00
13:00		Group Photo 12:30 - 14:00 Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	12:10 - 14:00 Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	Group Photo 12:30 - 14:00 Lunch in "Half Time" @ Nara National Museum & Poster [#] in Small Hall	12:00
14:00		14:00 - 15:50 Oral Session	14:00 - 16:10 Oral Session	14:00 - 16:50 Oral Session & Closing Remark	14:00
15:00					15:00
16:00	16:00 - 18:00 Registration & Welcome Reception in "Hiten" (4th Floor) @ Hotel Nikko Nara	Coffee Break in Small Hall	16:10 - 18:00 Poster Session* in Small Hall with Coffee		16:00
17:00		16:20 - 18:00 Oral Session		Transfer to Hotel Nikko Nara	17:00
18:00		18:00 - 20:00 Dinner in "Half Time" @ Nara National Museum	18:00 - 20:00 Dinner in "Half Time" @ Nara National Museum	18:00 - 20:00 Banquet in "Hiten" (4th Floor) @ Hotel Nikko Nara	18:00
19:00					19:00

Poster Session* in the evening of Dec. 4: For all poster presenters, please stand in front of your posters to explain them for participants.

Poster[#] during Lunch time: Participants can look at posters. Poster presenters do not necessarily have to stand in front of their posters.

Venue : Todaiji Culture Center (Todaiji Museum) < http://www.todaiji.or.jp/english/ >
Welcome Reception on Dec. 2 : "Hiten" (4th Floor) in Hotel Nikko Nara
Banquet on Dec. 5 : < https://www.okura-nikko.com/japan/nara/hotel-nikko-nara/ >
Lunches & Dinners : "Half Time" in Nara National Museum < https://www.narahaku.go.jp/english/ >



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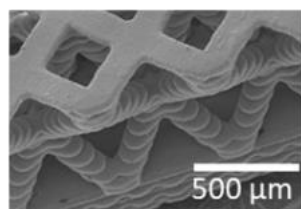
R & D

SK Fine promotes the research and development of the ceramic modeling process with customers.



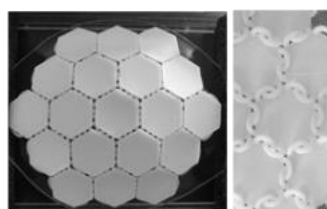
Example

Novelty ceramic parts impossible with conventional method



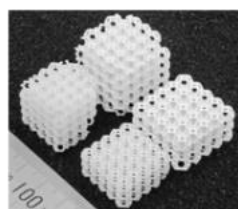
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