

International Conference on Digital Fabrication

Overall Program Schedule

*Please note that the Day 1 and Day 2 sessions are held at the East Research Building, whereas the Day 3 sessions are in the West School Building. They are #3 and #12 on the campus map at: <http://www.keio.ac.jp/en/maps/mita.html>

1st Day (Academic Conference)

Mar 3 (Thu)	East Research Building 6th Floor	East Research Building 4th Floor	East Research Building 8th Floor
10:00	(Registration opens)		
10:30- 11:15	Opening Keynote: Dr. Jun Murai		
11:15- 12:00	Guest Talk: Dr. Masayuki Hirafuji		
12:00- 13:00	One-minute Poster Pitch Session Chair: Jianyou Lee		
13:00- 14:00			Lunch
14:00- 15:50	Paper Session A <Design & Fabrication> Chair: Dr.Kenji Toki	Paper Session B <Bio-Applications> Chair: Dr. Hidemitsu Furukawa	
16:00- 17:50			Poster Presentation
18:00- 18:45	Guest Talk: Dr. Koichi Nakayama		
18:45	Closure of Day 1		

※ Guest speaker talks are co-organized with COI Symposium on Fab-Earth/
Creative Citizens (<http://coi.sfc.keio.ac.jp>)

2nd Day (Academic Conference)

Mar 4 (Fri)	East Research Building 6th Floor	East Research Building 4th Floor	East Research Building 8th Floor
10:00	(Registration opens)		
10:30- 11:15	Opening Keynote: Dr. Uday B. Desai		
11:15- 12:00	Opening Keynote: Dr. Guy Littlefair		
12:00- 13:00			Lunch
13:00- 14:50		Paper Session C <Social & Legal> Chair: Mr. Michael Weinberg	Special Session <Education> Guest: Ms. Youka Watanabe <Community> Guest: Mr. Matt Krebs
15:00- 16:50		Paper Session D <Process & Steps> Chair: Dr. Noriyuki Aibe	Paper Session E < Applications & Diffusion > Chair: Dr. Kazuo Kadota
17:00- 17:45			Guest: Dr. Shinjiro Umezu
18:00- 18:45			Closing Talk: Dr. Ian Gibson
18:45			Reception Party at Celestine Hotel (*See the map)

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 Creative Citizens (<http://coi.sfc.keio.ac.jp>)

3rd Day (Public Symposium)

Mar 5 (Sat)	West School Building Hall
10:00-	(Registration Opens)
10:00- 12:00	Research Exhibition by COI project on Kansei-oriented Digital Fabrication
12:00- 13:00	(Lunch time)
13:00- 13:30	Welcoming Remarks and Opening Keynote
13:30- 14:30	<p>Session 1: Inclusive Design and Kansei-oriented Design</p> <p>Guest Speaker: Dr. Julia Cassim (KYOTO Design-Lab, Kyoto Institute of Technology)</p> <p>COI Presentation: Dr. Noriko Nagata (Kwansei Gakuin University) Dr. Kouichiro Eto (The National Institute of Advanced Industrial Science and Technology) Dr. Kaoru Arakawa (Meiji University)</p>
14:40- 15:40	<p>Session 2: Development of 3D Printer as Open Source Hardware</p> <p>Guest Speaker: Dr. Adrian Bowyer (RepRap, Ltd) *video</p> <p>COI Presentation: Dr. Hidemitsu Furukawa (Yamagata University) Dr. Hiroya Tanaka (Keio University)</p>
15:50- 16:50	<p>Session 3: Intellectual Property and Business Model</p> <p>Guest Speaker: Mr. Michael Weinberg (Shapeways, Inc.)</p> <p>COI Presentation: Dr. Shigeru Kobayashi (Institute of Advanced Media Arts and Sciences) Dr. Tomoaki Watanabe (Keio University)</p>
16:50- 17:30	<p>Panel Discussion</p> <p>Dr. Julia Cassim, Mr. Michael Weinberg, Dr. Jun Murai and Mr. Kenji Matsubara</p>

※ The event of Day 3 is co-organized with COI Symposium on Fab-Earth/ Creative Citizens (<http://coi.sfc.keio.ac.jp>)

Paper Session Details

Session A: Design and Fabrication -- Day 1, 6th floor, 14:00-15:50

Chair: Dr. Kenji Toki

- 1) Laser Cutter Enhances URUSHI Craft Practice and Expression. Kenji Toki
- 2) Openness Approaches of Product Design in the Digital Fabrication. Jianyou Li, Hiroya Tanaka.
- 3) Experience of Implementation of a Course with 3D Printing for Cultivating Creativity of Non Art-major Students. T.Ohta, T.Sato
- 4) Memory of Things (MoT): Interactive memory product design. Chor-Kheng Lim
- 5) An Interactive Fabrication System that Allows Users to Edit a 3D Model During 3D Printing. H. Takahashi, H. Miyashita

Session B: Bio-Applications -- Day 1, 4th floor, 14:00-15:50

Chair: Dr. Hidemitsu Furukawa

- 1) Development of the 3D Food Printing System for Japanese Sweets. K. Kadota
- 2) Design of Low Cost Prosthetic Leg Using 3D Printer. Yutaka Tokushima, Yoko Kurata, Tsuneo Masuda
- 3) 3D Bioprinting for Tissue Engineering Application. Sindhuja D.E., Subha Narayan Rath, Falguni Pati.
- 4) A Review of Hydrogels in Droplet based Bio-Fabrication Techniques. Shahid Ansari, Mahendra D. Date, Subha Narayan Rath and Suryakumar S.

Session C: Social and Legal Issues -- Day2, 4th floor, 13:00-14:50

Chair: Mr. Michael Weinberg

- 1) Copyright Approaches to Protect Works of Applied Arts in the Digital Fabrication Era. H. Kawamoto
- 2) Suggestion of the compulsory insurance system in the fab society. Ryota Akasaka
- 3) Responsibility Assignment and Digital Fabrication: Toward a socially grounded legal system. T. Watanabe
- 4) Business Model Typology for FabLabs: Examining the sustainability question with Asian Labs. T. Watanabe and Y. Tokushima

Session D: Processes and Steps -- Day 2, 4th floor, 15:00-16:50

Chair: Dr. Noriyuki Abe

- 1) ofxEpilog: An openFrameworks addon for controlling an Epilog laser cutter. Mutsuhito Ando, Kiyoshi Suganuma, Fumie Takahara, Takayuki Ito, Kazuhiro Jo
- 2) Automatic Feature Recognition and Sequencing for Incremental Sheet Forming. R. Lingam, A. Bansal, N. V. Reddy
- 3) A Novel Method to Manufacture Complex Metallic Objects with Abrupt Overhangs Using Orthogonal Layers. P. Jayaprakash Sharma, S. Surya kumar
- 4) High Efficiency Connection Method on Electric Signal Lines between Modular Circuit Boards. Noriyuki Aibe

Session E: Applications and Diffusion -- Day 2, 8th floor, 15:00-16:50

Chair: Dr. Kazuo Kadota

- 1) BiomimeticsBricks, BioBricks; a Platform of Knowledge Integration for Biomimetics by Digital Fabrication. Sayo Morinaga, Yasuhiro Suzuki
- 2) Additive Manufacturing in the Cycling Industry: Mainstream or gimmick. P.K.Collins, and I. Gibson
- 3) Development of Sustainable Manufacturing Process Maps through Hybridization of Soft Computational Techniques. Dr. Abhay Sharma
- 4) A New Search Engine for 3D Print Models and 3D Data Conversion Platform. Hiroya Tanaka, Takumi Moriya, Atsushi Masumori, Shuhei Uda
- 5) Sandwich Grafting Repair of Aviation Parts Using Digital Fabrication Techniques. B.M.H. Mohammad Dzulkifli, D.R.S.V. Varma.

Guest Talks

Guest Talk 1:

Agriculture, Farming and Fabrication - Day 1, 6th floor, 11:15 - 12:00

Dr. Masayuki Hirafuji (Professor, Tsukuba University)

Guest Talk 2:

Bio and Medical Fabrication - Day 1, 6th floor, 18:00 - 18:45

Dr. Koichi Nakayama (Professor, Department of Regenerative Medicine and Biomedical Engineering, Saga University)

Guest Talk 3:

Fab Learning and Education - Day 2, 4th floor, 13:00 - 13:50

Ms. Youka Watanabe (Director, FabLab Kamakura)

Guest Talk 4:

Ethnographic study on Fab Lab Community in Japan - Day 2, 4th floor, 13:50 - 14:40

Mr. Matt Krebs (FabLab Kamakura, Keio University)

Guest Talk 5:

Bio Printing and International Collaboration - Day 2, 6th floor, 17:00 - 17:45

Dr. Shinjiro UmezU (Associate Professor, Faculty of Science and Engineering, Waseda University)

Guest Talk 6:

Inclusive Design and Kansei-based Design - Day 3, 13:30 - 14:00

Dr. Julia Cassim (Project Professor, KYOTO Design Lab, Kyoto Institute of Technology)

Guest Talk 7:

Open Source Development of 3D Printers - Day 3, 14:40 - 15:10

Dr. Adrian Bowyer (Director, RepRap, Ltd.)

Guest Talk 8:

Intellectual Properties and Business Model - Day 3, 15:50 - 16:20

Mr. Michael Weinberg (IP & General Counsel, Shapeways, Inc.)

Note: title of the talks are yet to be confirmed. Shown above are the subject areas of the talks.

List of Posters (1/3)

- 1) **Embodied Mathematics through Digital Fabrication Experience.**
Nao Tsushima, Hiroya Tanaka
- 2) **3D Modeling Practice Combined of Digital Fabrication and Handwork.**
Takayo Ayata, Hiroya Tanaka
- 3) **Development of Large scale 3D Printer “ArchiFAB” and its Application for Light-weight Structures based on “Gyroid” Shape.**
Tomohiro Yasui, Yasutomo Matsuoka, Hiroya Tanaka
- 4) **Developing the Digital Sewing Machine to Create Open Design Environment for Fashion and Textile Design.**
Konomi Morikawa, Hiroya Tanaka
- 5) **The Mechanism-Learning Installation in the Public Space with Knitting Machine for Example.**
Yoshihiro Asano, Hiroya Tanaka
- 6) **Eigen-Spectrum Based Modeling for Temperature Field during Laser Melting Of Metal Powders in Additive Layer Manufacturing.**
Tengfei Xiao
- 7) **Nursing x Fab: The concept and the potential of digital fabrication in nursing.**
Shoko Miyagawa, Hiroya Tanaka, Ryosuke Wakasugi, Tsuneo Masuda, Junki Yoshioka, Kanae Oyama, Taiki Iwamoto
- 8) **A Manufacturing History Management System for Digital Fabrication.**
Yosuke Kezuka, Yuki Sato, Jin Mitsugi
- 9) **FABrick Beehive: A case study of 3D printing in architecture with biological approach.**
Hiroyuki Tachikawa, Tomohiro Yasui, Nao tsushima, Emu Masuyama, Hiroya Tanaka
- 10) **Developing 3D Assembly/Disassembly System with Kelvin Block.**
K. Sekijima, H. Tanaka
- 11) **Shitsukan-sommelier, a Tool for the Personal Digital Fabrication in Near Future.**
Y. Tani, K. Tobitani, M. Imura, N. Nagata
- 12) **A “Hackable” Laser-cut Household Moving Platform.**
Chen, Yi Ting, Jianyou Li, Hiroya Tanaka

List of Posters (2/3)

- 13) **Mobile Platform for Large Movement in the Digital Fabrication Machine, "Spiderbot."**
Liao Chen-Hsi, Hiroya Tanaka, Jianyou Li
- 14) **The Psychological Evaluation of Spacious Impression Using CG Images of Vehicle Interiors.**
A. Shiraiwa, T. Yasumoto, S. Kaji, K. Tobitani, & N. Nagata
- 15) **New 3D expression of daily GPS Log.**
Sho Ito, Hajime Ishikawa, Soichiro Ito Nicolas, Kiyohiko Kando.
- 16) **Narrative and Meaning as the Cognitive Foundation of Design.**
K. Nikata, K. Inomata, N. Lee, N. Nagata.
- 17) **Hacking and Making of Open-Source Touch 3D Scanner.**
Hiroaki Ohba, Hiroya Tanaka
- 18) **The Community Platform of Cosplay Customs Making by the Digital Fabrication.**
Yu-Jung Hsu, Hiroya Tanaka, Jianyou Li
- 19) (retracted)
- 20) **Nursing x FAB: Development of Self-Help Tools Through the Use of 3D Printers.**
Junki Yoshioka, Shoko Miyagawa, Hiroya Tanaka, Taiki Iwamoto, Kanae Oyama
- 21) **Designing the Process of Deconstruction by Powder Bed Fusion 3D printing.**
Tomohiro Shimizu, Hiroya Tanaka
- 22) **A Comparison Study on 3D Features in Term of Effective Representation for Impression of Shape.**
K. Tobitani, S. Akizuki, K. Katahira, M. Hashimoto, N. Nagata
- 23) **The Factorial Structure of Subjective Evaluation of Three-Dimensional Shapes: A Case Study of Cosmetic Bottles**
K. Katahira, K. Muto, K. Tobitani, T. Matsumoto, K. Tanaka, S. Hashimoto, N. Nagata
- 24) **Fabrication of Thin Complex Metallic Objects Using Inclined Slicing and Based AM Process.**
Jayaprakash Sharma Panchagnula, Suryakumar Simhambhatla
- 25) **Model-based Upstream Design and Simple Communication Protocol for Digital Fabrication.**
M. Miura, T. Kageyama, T. Makita

List of Posters (3/3)

- 26) **Estimation and Application of Individual Differences in the Kansei Evaluation of the Three-Dimensional Shapes.**
S. Hashimoto, K. Tanaka, K. Katahira, K. Muto, N. Nagata
- 27) **A New Method for Manufacture of Functionally Graded Composites through Friction Stir Processing.**
B.V. Himasekhar Sai, Bandari Vijendra, Abhay Sharma
- 28) **Improvement of Haptic Sense of use by Adding Vibration to Pen-shaped Digital Writing Implement.**
S. Ohsuga, M. Imura, Y. Itoh, F. Kishino
- 29) **Tool Path Generation System for Incremental Sheet Metal Forming.**
Bansal A, Lingam R, Reddy NV
- 30) **Extraction of Kansei Information in Personal Fabrication Based on Laban Movement Analysis.**
Teru Ozawa, Michiya Yamamoto, Kazuaki Tanaka, Saizo Aoyagi, Noriko Nagata
- 31) **Tactile Feedback for Intuitive UAV Control System.**
T. Sugiura, M. Haris, H. Nobuhara
- 32) **Supporting Method by Presenting Motifs and Hints in Designs of Artifacts.**
N. Lee, K. Inomata, K. Nikata, N. Nagata
- 33) **Development of Finger-surface Contact Simulation for Tactile Feeling of Fabricated Products.**
M. Imura, N. Nagata
- 34) **Design and Digital Fabrication of Low Cost Millimeter Size Biochip - Applications in drug screening.**
Sarpras Swain, Lopamudra Giri, Suryakumar S
- 35) **Theory and Applications of 3D Origami Printer.**
Bo Yu, Maria Savchenko, Ichiro Hagiwara
- 36) **Exploring IoT System Architecture for Smart Platform.**
K. Kataoka, V. N. Jindal, V. Mulimani, C. V. S. Shashank, P. Shrivastava, K. Anand, A. Pateria, K. Singh, T. Prathyusha, S. Gangwar