



JSPS Core-to-Core Program



ELyT Workshop 2024

TOKYO ELECTRON House of Creativity,

Sendai, Japan

March 11th, 2024

Tsukioka Hotel,

Kaminoyama, Japan

March 12th-13th, 2024

Program

Schedule of ELyT Workshop 2024

< Monday, March 11 >

Venue: TOKYO ELECTRON House of Creativity, Katahira Campus,
Tohoku University

https://www.tohoku.ac.jp/map/en/print.html?f=KH_Z05

08:45	Reception desk open
09:20	Opening remarks
09:30	Invited Lecture 1,2
11:40	Lunch Break
13:10	Invited Lecture 3, 4, 5
15:40	Break
16:00	Invited Lecture 6
16:40	Session 1
17:55	End of session
18:30	Networking event in Pizzeria LAVAROCK at Trust Tower (supported by TFC)

<https://www.mt-restaurant.com/lavarock/sendai/>

< Tuesday, March 12 >

Venue: Tsukioka Hotel, Kaminoyama

https://www.tsukioka.co.jp/lg_en/

07:50	Please gather up in front of IFS Building 1 by 07:50 https://www.tohoku.ac.jp/map/en/print.html?f=KH_C09 Leaving Katahira campus for Kaminoyama by chartered bus
10:00	Session 2
12:00	Lunch (supported by IFS)
13:30	Session 3
15:45	Break
16:00	Session 4
18:45	End of session
19:00	Networking dinner (supported by IFS)
21:00	Group sessions, Free discussions (-22:00)

< Wednesday, March 13 >

Venue: Tsukioka Hotel, Kaminoyama

- 07:00 Breakfast
* Please check out your room before the session starts.
- 09:00 Session 5
- 11:30 Announcement of Next ELyT Workshop and ELyT School
Concluding remarks

- 12:15 Leaving hotel for Yamagata Kankou-Bussan-Kan for lunch
by chartered bus
- 12:30 Lunch and Shopping
- 13:45 Leaving for Kaminoyama Castle for an excursion by chartered bus
- 14:00 Excursion at Kaminoyama Castle
- 15:00 Leaving for Sendai by chartered bus
- 16:30 Arriving at Sendai station and then Katahira Campus

* Except for the invited lectures, each presentation is slotted 15 min. including Q&A, as an oral presentation.

Program of ELyT Workshop 2024

Monday, March 11th

TFC session			
Chair: Tetsuya Uchimoto (Tohoku University)			
Time	Title	Presenter(s)	Project
09:20-09:30	Opening remarks EVP M. Kotani (Tohoku University) EVP D. Fabregue (INSA Lyon)		
09:30-10:30	INVITED 1 : From NDE to SHM, recent trends and challenges for numerically assisted inspections	Pierre Calmon (CEA)	
10:30-10:40	Break		
10:40-11:40	INVITED 2 : Recent progress on ultrasonic phased array imaging for accurate measurement of Cracks	Yoshikazu Ohara (Tohoku University)	
11:40-13:10	Lunch Break		
TFC session			
Chair: Nicolas Mary (INSA Lyon)			
Time	Title	Presenter(s)	Project
13:10-14:10	INVITED 3 : In situ acoustic measurement of electrochemically controlled localized corrosion	Olivier Devos (Université de Bordeaux)	
14:10-15:00	INVITED 4 : The Carnot Institute: a booster for developing collaborative industrial research programs	Manuel Collet (Carnot Institute)	
15:00-15:40	INVITED 5 : Atomic Layer Processing in Nanoscale Semiconductor Devices	Kazuhiko Endo (Tohoku University)	
15:40-16:00	Break		

Session 1			
Chair: Jean-Yves Cavaille (ELyTMaX, Tohoku University)			
<i>Time</i>	<i>Title</i>	<i>Presenter(s)</i>	<i>Project</i>
16:00-16:40	INVITED 6 : Morphological studies of polymeric hierarchical structures by electron microscopy	Hiroshi Jinnai (Tohoku University)	
16:40-16:55	Atomic structure of bulk metallic glasses and supercooled liquids studied by transmission electron microscopy, scanning tunneling microscopy, synchrotron-radiation X-ray diffraction and ab-initio molecular dynamics simulation	D. V. Louzguine (Tohoku University)	
16:55-17:10	Magnetostrictive switching control for vibration energy harvesting	An LI (Tohoku University)	
17:10-17:25	Effect of Electron Irradiation on Impact Properties of Carbon Fiber Reinforced Heat Resistant PPS Resin Composites	Ayane IBII (Tokai University)	
17:25-17:40	Reduced-order Modeling for Flexible Multibody Systems in Hamiltonian formulation using Component Mode Synthesis Method	Shuonan DONG (Tohoku University)	
17:40-17:55	Various Insights about Heat Transfer at Solid-Liquid Interfaces and beyond via Molecular Dynamics	Donatas SURBLYS (Tohoku University)	

• 18:30-20:30 Networking event in Pizzeria LAVAROCK at Trust Tower

Tuesday, March 12th

• 07:50 Gathering up in front of IFS Building 1, Leaving for Kaminoyama by chartered bus

Session 2			
Chair: Vincent Fridrici (ECL)			
Time	Title	Presenter(s)	Project
10:00-10:15	NDT based on the magnetization mechanisms: last progress in the frame of BENTO	Benjamin Ducharne (ELyT MaX)	BENTO
10:15-10:30	Elaboration of micro-porous powders by liquid metal dealloying	Louis Lesage (INSA Lyon, Tohoku University)	EPOPEE
10:30-10:45	J-F Collaboration for Developing Composite Materials Effects of EBI to Polymers & Its Composites CF/Polymers Adhesive Force Increased by EB-irradiation	Yoshitake Nishi (Tokai University)	
10:45-11:00	Energy Conversion Magnification Through Stress-Induced Phase Transitions in Ferroelectrics	Mickaël LALLART (INSA Lyon)	FIESTA
11:00-11:15	Toward understanding of bending behavior of electro-responsive polymer	H. TAKANA (Tohoku University) J-Y. CAVAILLE (ELyTMaX / Tohoku University)	TEmpuRA
11:15-11:30	Fe-Al welding - Experiments and simulations	Sylvain Dancette (ELyTMaX)	MIMECHAS
11:30-11:45	Design of an EIS-based sensor for non-invasive in-field corrosion monitoring	Z. Dong (ELyTMaX) H. Abe (Tohoku University) B. Ter-Ovanessian (INSA Lyon)	MOREOVER

11:45-12:00	Energy-saving identification of structures using piezoelectric transducer operated under semi-active control	Yushin HARA (Tohoku University)	
12:00-13:30	Lunch		

Session 3			
Chair: Gael Sebald (ELyTMAX)			
<i>Time</i>	<i>Title</i>	<i>Presenter(s)</i>	<i>Project</i>
13:30-13:45	Robust shape optimization of a disc-brake system under dynamical criterion	Frédéric Gillot (ELyTMAX)	MuORoD
13:45-14:00	Molecular Theory Analysis of Carbon Diffusion in Iron which is Happened Phase Transformation under Electric Field	P. Chantrenne (INSA Lyon) T. Tokumasu (Tohoku University) C. Adessi (University Claude Bernard Lyon1) J. Kioseoglu (Aristotle University of Thessaloniki)	CarboEDiffSim
14:00-14:15	Evaluation of the Hydrogen Solution Effect on the Elastic and Fatigue Properties of Steel and the Enhancement of Hydrogen Solution through Electron Beam Irradiation	Helmut Takahiro UCHIDA (Tokai University)	
14:15-14:30	Research of efficient fast scintillator: Cerium-doped inorganic glasses	Georges BOULON (Université Claude Bernard Lyon 1)	SCINTILLATOR GLASSES
14:30-14:45	Electromagnetic Tracking of a catheter using Giant Magneto-resistors	Louis PAQUET (ELyTMAX)	
14:45-15:00	Viscoelastic response of magnetorheological elastomers: experiments and modeling	Kostas Danas (CNRS / ELyTMAX)	

15:00-15:15	Metallization of carbon fiber-reinforced thermoplastic polymers for lightning strike protection using low-pressure cold spray	H. Saito W. Kai T. Funaki Y. Ichikawa K. Ogawa (Tohoku University)	
15:15-15:30	The development of multimaterial and multimodal fibers for biosignal recording	Etienne Le Bourdonnec (Tohoku University)	
15:30-15:45	Thermal management beyond Fourier using nanomaterials	Konstantinos Termentzidis (INSA Lyon)	
15:45-16:00	Break		

Session 4

Chair: Makoto Ohta (Tohoku University)

<i>Time</i>	<i>Title</i>	<i>Presenter(s)</i>	<i>Project</i>
16:00-16:15	Recent progress in laser-based diagnostics to study near-wall combustion in aircraft gas turbine engines	Pradip XAVIER (INSA Rouen Normandie)	
16:15-16:30	Fiber-based soft actuators via the thermal drawing	Yuto Akimoto (Tohoku University)	
16:30-16:45	Serendipity in materials science: how a simple doping leads to novel and outstanding properties in simple dielectric HfO ₂ !	Bertrand Vilquin (ECL)	
16:45-17:00	Structural evaluation of acoustic streaming jet for application to natural convective heat transfer enhancement	Taisei Takagi (Tohoku Univeristy)	
17:00-17:15	Surface treatment by electromagnetic pulse peening to introduce compressive residual stresses in metals and alloys	Daniel NELIAS (INSA Lyon)	

17:15-17:30	The effect of asymmetry in stenosis on blood flow	K. Yanagisawa (Tohoku University) C. Frindel D. Garcia (INSA Lyon) H. Anzai M. Ohta (Tohoku University)	Engineering for Health Simulation & Modeling
17:30-17:45	Modeling electron and phonon transport at Metal/semiconductor interfaces using DFT	Christophe A. Adessi (University Claude Bernard Lyon1)	
17:45-18:00	Monte Carlo Studies on Geometrically Confined Skyrmions in Nanodots	Hiroshi Koibuchi (National Institute of Technology, Ibaraki College)	
18:00-18:15	Tribological behavior of Inconel 718 alloy obtained by additive manufacturing (Laser Metal Deposition process)	Vincent Fridrici (ECL)	
18:15-18:30	PROGRAMMABLE METACOMPOSITE FOR CONTROLLING NOISE AND VIBRATION	Manuel Collet Emanuel De Bono Kevin Billon (ECL) Morvan Ouisse (FEMTO-ST)	
18:30-18:45	Nondestructive Evaluation of Nitridation Layer in Austenitic Stainless Steel by Eddy Current Testing	L. OLLIVIER-LAMARQUE T. UCHIMOTO (Tohoku University) K. MIZUSHINO Y. MATSUNAGA T. FUJIMORI (IHI Corp. Japan)	
18:45	End of session		

- 19:00-21:00 Networking Dinner
- 21:00-22:00 Group sessions, Free discussions

Wednesday, March 13th

• 07:00 Breakfast

Session 5			
Chair : Hitomi Anzai (Tohoku University)			
Time	Title	Presenter(s)	Project
09:00-09:15	Making cool with elastocaloric polymers: progress of the ELyT Global REFRESH project	Gael Sebald (ELyTMaX) Atsuki Komiya (Tohoku University)	REFRESH
09:15-09:30	Fiber dense media in superinsulation, understanding ageing mechanisms, coupled thermal and tomography results	Genevieve FORAY (INSA Lyon)	
09:30-09:45	Collaboration for cerebral aneurysm	M. Ohta (Tohoku University) G. Plet J. Raviol H. Magoariec C. Pailler-Mattel (ECL) R. Hasegawa S. Sasaki (Tohoku University) H. Kosukegawa K. Yu (Blue Practice Co., Ltd. / Tohoku University)	Biomechanics – Cerebral aneurysms
09:45-10:00	Design of elastocaloric refrigeration systems: development of a single stage proof of concept for near-room temperature cooling temperature cooling	Marianne SION (ELyTMaX)	

10:00-10:15	Benefits of the Gleeble machine at MATEIS laboratory	Florian Mercier (INSA Lyon)	
10:15-10:30	Evaluation of Hydrogen Embrittlement on Austenitic Stainless Steels by Acoustic Emission Testing	S. TAKEDA R. MATSUMOTO T. UCHIMOTO (Tohoku University) H. ENOKI T. IJIMA (AIST)	
10:30-10:45	Bioengineering of vascularized 3D tissues developed in vitro	Z. Delmas D. Alcaide T. Duenki J. Cacheux Y. Ikeuchi Y. T. Matsunaga B. Kim V. Salles (LIMMS, IIS, The University of Tokyo)	
10:45-11:00	Microelectric Fiber Sensors for Multiplexed Neurochemical Sensing via Electrografting and Click Chemistry	Tomoki Saizaki (Tohoku University)	
11:00-11:15	Ultrasonic testing of the tungsten-copper bonded interface in the divertor of a nuclear fusion reactor	Mohamad Faridafshin (Tohoku University)	
11:15-11:30	Study on heat transfer characteristics in cooling system by elastocaloric effect	Shun Ishii (Tohoku University)	
11:30-	Announcement of Next schedule for ELyT workshop and ELyT school		
	Concluding remarks		

ELyT Workshop 2024

March 11-13, 2024,
Sendai & Kaminoyama,
Japan



-
- 12:15 Leaving hotel for Yamagata Kankou-Bussan-Kan for lunch by chartered bus
 - 12:30-13:45 Lunch and Shopping
 - 13:45 Leaving for Kaminoyama Castle for an excursion by chartered bus
 - 14:00-15:00 Excursion at Kaminoyama Castle
 - 15:00 Leaving for Sendai by chartered bus
 - 16:30 Arriving at Sendai station, and then Katahira Campus