

Satellite session of UTokyo – Stockholm Trio workshop

- **September 29th (afternoon): Thematic session on Nanocellulose**
- **September 30th (full day): Joint session with ASPIRE-EXAR**

UTokyo and Stockholm-Trio have been working closely to advance nanocellulose research and development, with the shared goal of fostering innovative, sustainable, and green technologies for the future. The session will open in the afternoon of September 29, focusing on the latest breakthroughs in nanocellulose research. On September 30, the program will continue in collaboration with ASIRE-EXAR, broadening the scope to cover extremely high aspect ratio (EXAR) nanomaterials such as nanotubes, two-dimensional materials, and spider silk.

This event is partially supported by the JST-ASPIRE program.

[EXAR | Interdisciplinary research of EXtreme Aspect-Ratio \(EXAR\) nanomaterials](#)

Day1 September 29th 12:50-18:00 UTokyo-Stockholm Trio Workshop, Nanocellulose session

Time	Speaker		Theme
1st Slot for Day1, Chair Fredrik Lundell			
12:50-13:00 JST	Fredrik Lundell	KTH Professor	Opening remarks
13:00-13:20 JST	Daniel Söderberg	KTH Professor	Coarse-grain simulations reveal the mesoscale dynamics of nanofibrillar dispersions
13:20-13:40 JST	Shuji Fujisawa	UTokyo Associate Professor	Exploring the surface chemistry of nanocellulose using DNP-enhanced NMR
13:40-14:00 JST	Yuanyuan Li	KTH Associate Professor	Synchronized ultrasonography and electromyography signals detection enabled by nanocellulose-based ultrasound transparent electrodes
14:00-14:20 JST	Noriyuki Isobe	JAMSTEC/UTokyo Researcher	Molecular architecture of coagulated cellulose
14:20-14:40 JST	Kazuho Daicho	UTokyo Assistant Professor	Visualization of nanocellulose surface charges by frequency-modulation atomic force microscopy
14:40-14:55 JST	Coffee Break@ Entrance Hall		
2nd Slot for Day1 (Student Slot), Chair: Shuji Fujisawa			
14:55-15:10 JST	Chirag Anilkumar	UTokyo PhD Student	Thermal transport behaviour due to confined water in aligned cellulose nanofibrils
15:10-15:25 JST	Mu-Rong Wang	KTH PhD Student	Structural change of CNF-based filaments induced by heat treatment
15:25-15:40 JST	Jiaxin Peng	UTokyo PhD Student	3D-printer actuated flow focusing spinning for enhanced thermal conductivity in nanocellulose films
15:40-15:55 JST	Haoguo Zhang	UTokyo PhD Student	Flame-retardant and mechanically strong transparent papers produced via synergistic chemical–mechanical loosening of wood pulp
15:55-16:10 JST	Sol Malizia	KTH PhD Student	Multiscale investigation of cellulose–water interactions through hybrid methods
16:10-16:25 JST	Coffee Break@ Entrance Hall		
3rd Slot for Day1, Chair: Tsuguyuki Saito			
16:25-16:45 JST	Fredrik Lundell	KTH Professor	Flow induced alignment of nanofibers
16:45-17:05 JST	Yuto Kaku	JAMSTEC/UTokyo Post Doc	Effect of nanofibrillation on chitin biodegradation in seawater
17:05-17:25 JST	Fariyha Alex Sellman	KTH Post Doc	Cellulose nanofibril materials - Influence of fibril aspect ratio, chemical functionality, and volume fraction on mechanical properties
17:25-17:45 JST	Kayoko Kobayashi	KyotoU/UTokyo Assistant Professor	Plate-like cellulose crystals: morphological changes induced by surface modification
17:45-18:00 JST	Tsuguyuki Saito	UTokyo Professor	Closing
18:00 JST-	Workshop Banquet (Invited participants)		

Day2 September 30th 09:00-12:05 UTokyo-Stockholm Trio Workshop X ASPIRE-EXAR

Time	Speaker		Theme
1st Slot for Day2 (Joint lab introduction + Student slots), Chair: Daniel Söderberg			
09:00-09:15 JST	Yaerim Lee	UTokyo Lecturer	ASPIRE-EXAR joint lab as a strategic platform for nanomaterials research and collaboration
09:15-09:30 JST	Beomgyu Choi/Kyoungjung Kim/Yijia Wu	UTokyo PhD Student	Thermal conductivity measurements of aligned CNT assemblies
09:30-09:45 JST	Tashi Xu	UTokyo PhD Student	Thermal conductivity measurement of twisted bilayer graphene
09:45-10:00 JST	Yuka Tomita	UTokyo Master Student	Surface charge-regulated adsorption of nanocellulose at liquid-liquid interfaces
10:00-10:15 JST	Kosuke Osawa	UTokyo Master Student	Linking shear viscosity to length distribution in cellulose nanofibril dispersions
10:15-10:30 JST	Tobias Fietze	Karolinska Institutet PhD Student	Sticky coating for silk fibers
10:30-10:45 JST	Coffee Break@ Entrance Hall		
2nd Slot for Day2, Chair: Kazuhiro Yanagi			
10:45-11:05 JST	Tom Willhammar	SU Associate Professor	Scanning electron diffraction reveals the hierarchical ordering of polysaccharides in two and three dimensions
11:05-11:25 JST	Yuichiro Kato	RIKEN Chief Scientist	Assembly of mixed-dimensional heterostructures from atomically defined semiconductor nanomaterials
11:25-11:45 JST	Simon Law	RIKEN Research Scientist	Mitochondria-specific protein delivery by protease-triggered release in plants with single-walled carbon nanotubes
11:45-12:05 JST	Antonio Capezza	KTH Researcher	Joint approach to produce porous absorbent natural materials – J.A.P.A.N. Project
12:05 JST-	Lunch (Horizon Europe session or ASPIRE mingle)		

September 30th 13:30-17:25 UTokyo-Stockholm Trio Workshop X ASPIRE-EXAR

Time	Speaker		Theme
3rd Slot for Day2, Chair: Keiji Numata			
13:30-13:50 JST	Junichiro Shiomi	UTokyo Professor	ASPIRE and phonon engineering of CNF, CNT and 2D-material assemblies
13:50-14:10 JST	Anna Rising	SLU Professor	From spider silk biology to artificial silk spinning
14:10-14:30 JST	Taichi Ito	UTokyo Professor	Polysaccharide-based injectable hydrogels for medical applications
14:30-14:50 JST	Martin Humenik	University of Bayreuth Senior Lecturer	Engineering spider silk: from molecular self-assembly to functional biointerfaces
14:50-15:10 JST	Benjamin Schmuck	SLU Researcher	Spidroin-amyloid hybrids for improved yield and purification
15:10-15:30 JST	Pengwen Chen	UTokyo Post Doc	A programmable polypeptide navigator for tumor thiol targeting via disulfide exchange
15:30-15:45 JST	Coffee Break@ Entrance Hall		
4th Slot for Day2, Chair: Yaerim Lee			
15:45-16:05 JST	Keiji Numata	Kyoto U Professor	Spider silk, cellulose, and nanocarbon
16:05-16:25 JST	Tomas Bohn Pessatti	SLU Researcher	Silk protein engineering for bioactive materials
16:25-16:45 JST	Tsukuru Masuda	UTokyo Lecturer	Wetting in structure controlled polymer brushes: machine learning prediction & dynamics
16:45-17:05 JST	Ali Malay	RIKEN Senior Scientist	SpiCE-17: A female-specific protein in spider dragline silk with potential defensive function
17:05-17:25 JST	Thomas Scheibel	University of Bayreuth Professor	In vitro spider silk spinning and in vivo silk manipulation
17:25 JST-	Break		

September 30th UTokyo-Stockholm Trio Workshop X ASPIRE-EXAR

Time	Speaker	Theme
5th Slot for Day 2, Chair: Yuichiro Kato		
17:40-18:00 JST	Kazuhiro Yanagi	TMU Professor THz response of twisted carbon nanotube fibers
18:00-18:20 JST	Yuanzhe Li	UTokyo Assitant Professor Interfacial thermal transport through nanoconfined water layers
18:20-18:40 JST	Zheng Liu	AIST Chief Researcher Atomic-scale structural characterization of low-dimensional materials using advanced TEM/STEM techniques
18:40-18:50 JST	Bin Xu	UTokyo Lecturer Exploring the interlayer thermal transport in twisted bilayer Janus hetrostructure
18:50 JST-	Junichiro Shiomi	UTokyo Professor Closing remarks
19:00 JST	ASPIRE Dinner (All attendees)	