



European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

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SYMPOSIUM I

Nanogenerators and smart sensing systems

Oral sessions : ROME - GROUND FLOOR
Poster sessions : ETOILE - FIRST FLOOR

Symposium Organizers:

Ana Isabel BORRAS MARTOS, Consejo Superior de Investigaciones Científicas, Spain

João VENTURA, University of Porto, Portugal

Renyun ZHANG (Main organizer), Mid Sweden University, Sweden

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Monday May 25
101 Nanogenerators & SS 1
Chairperson(s): RENYUN Zhang

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- | | | |
|-------|------|--|
| 08:30 | 33 | Triboelectric nanogenerators (TENG) for sustainable energy and sensing
WANG Zhong Lin (Invited) |
| 09:10 | 1486 | In-Silico Experiments to Explore Energy Harvesting through Triboelectrification
DINI Daniele (Invited) |
| 09:35 | 3309 | Mechanistic Origins of Electromechanical Response in Polysaccharide Polymers
FERREIRA Paula |
| 09:50 | 2961 | Multi-stimuli responsive Self-powered sensors for electronic skin applications
COCLITE Anna Maria |

Monday May 25
102 Nanogenerators & SS 2
Chairperson(s): TSAMIS Christos

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- | | | |
|-------|------|---|
| 10:30 | 961 | Embedding triboelectric charges in volume: from new piezoelectric-like materials to neuromorphic devices
ŠUTKA Andris (Invited) |
| 10:55 | 407 | The nature of publishing
DONGARE Prateek (Invited) |
| 11:20 | 2832 | A Molecular Particle Model for Triboelectrification
RENYUN Zhang |
| 11:35 | 3387 | From Functional Yarns to Fabric Systems for Energy Harvesting and Multimodal Sensing
MA Liyun |
| 11:50 | 2890 | Intelligent Thermoelectric e-Tattoos for Real-Time Health Monitoring and Thermal Diagnostics
PIRES Ana Lúcia |

Monday May 25
103 Nanogenerators & SS 3
Chairperson(s): DINI Daniele

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- | | | |
|-------|------|--|
| 14:30 | 3108 | Triboelectric tactile sensors: Current status and future trends
TSAMIS Christos (Invited) |
| 14:55 | 3381 | Electrical Characterization of Triboelectric Materials and Nanogenerators
JEON Sera |
| 15:10 | 1192 | Towards Wafer-Scale Fabrication of Implantable TENGs
MARTI María |
| 15:25 | 721 | Effect of nanofluids on contact electrification upon intrusion-extrusion into-from nanopores
WASIAK Tomasz |

- | | | |
|-------|------|---|
| 15:40 | 2879 | AI And Triboelectric Nanogenerators in Grid-free IoTs for Edge Computing, and Tactile Sensing
VASEASHTA Ashok |
|-------|------|---|

Monday May 25
104 Nanogenerators & SS 4
Chairperson(s): MA Liyun
PIRES Ana Lúcia

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- | | | |
|-------|------|---|
| 16:30 | 1885 | Piezoelectric constant quantization
WILLATZEN Morten (Invited) |
| 16:55 | 34 | From Nanoconfined Water Phenomena to Triboelectric Intrusion-Extrusion Energy Harvesters and Oil-Free Regenerative Dampers
GROSU Yaroslav (Invited) |
| 17:20 | 148 | 2D Materials for Wearable and Flexible TENG-Driven Sensing Technologies
ALRABIE Latifah |
| 17:35 | 426 | A High-performance Artificial Olfactory Chip for Real-Time Cold Chain Food Freshness Monitoring
TANG Wenying |
| 17:50 | 491 | Molecular Ferroelectric Cu(II) Complexes for Sustainable Energy Harvesting
HALDAR Rajashi |
| 18:05 | 1178 | Fiber-based piezoelectric-triboelectric hybrid nanogenerator via thermal drawing as self-powered wearable sensor
SINGH Vishwa Pratap |

Tuesday May 26
105 Nanogenerators & SS 5
Chairperson(s): ZI Yunlong

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- | | | |
|-------|------|--|
| 08:30 | 1316 | Hybrid Energy Harvesters combining piezoelectric energy harvester with perovskite solar cells
BRISCOE Joe (Invited) |
| 09:10 | 738 | Turning moisture into a benefit: Chitosan-reinforced pSBMA/pAAc hydrogel for wear-resistant, humidity-enhanced and anti-biofouling TENG
SHI Yijun |
| 09:25 | 2222 | Influence of Morphological and Structural Phenomena of Polyvinylidene Fluoride Layers on the Triboelectric Energy Harvesting Performance of Fibrous Materials
SHEE Chirantan |
| 09:40 | 3112 | Decoupling Crosslinking Networks for Improved Rapid Strain Response and Intelligent Sensing Applications
LONG Yin |
| 09:55 | 1010 | Carbon-based crack nanocomposites for durable energy harvesting and self-powered sensing
TOKI Gazi Farhan Ishraque |

Tuesday May 26
106 Nanogenerators & SS 6

Chairperson(s): BRISCOE Joe

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10:30	59	Multimodal tactile sensing enabled by contact electrification ZI Yunlong (Invited)
10:55	1493	Field matching principle for efficient water energy harvesting WANG Zuankai (Invited)
11:20	1336	Fixing the drains and getting the gains: how diamond open access and responsible research assessment can improve the current publishing landscape HISSA Barbara
11:30	3169	Triboelectric Energy Harvesting in Harsh and Remote Environments RODRIGUES Cátia
11:45	3067	Triboelectric nanogenerators (TENG) constructed from dense ZIF-zni crystals integrated in PU composite films JIN Chuzhan

Tuesday May 26
107 Nanogenerators & SS 7

Chairperson(s): WANG Zuankai

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13:45	91	Triboelectric Medicine: Nanogenerator-Driven Breakthroughs in Battery-Free Biomedical Innovation KIM Sang-Woo (Invited)
14:10	292	Energy Harvesting to Environmental Protection via Solid-State Electric-Field Engineering BAIK Jeong Min (Invited)
14:35	307	Toward High-Flux Nanoplastic Sequestration via a Reusable, Self-Powered Electrokinetic Filtration Platform KIM Doheon
14:50	378	Surface Modified Carbon Nanotube-Polydimethylsiloxane-Based High-Performing Triboelectric Nanogenerator BHATTACHARYYA Mriganka
15:05	1068	Optotriboelectric Energy Harvesters: Light-assisted Output Enhancement ZHOU Qingyang
15:20	240	Plasma-enable 3D nanomaterials and thin film for Drop-TENGs and its hybridization with Perovskite Solar Cells NÚÑEZ GÁLVEZ Fernando
15:35	890	Light-Modulated Tactile Sensing Enabled by the Piezo-Phototronic Effect in Flexible Chiral Organic Single Crystals ARORA Kiran
15:50	2571	Structure-Property Relationships Governing Piezoelectric Response in Additively Manufactured TPU and PLA VERMA Nishank

Tuesday May 26
IPO2 Poster session 2

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16:30	01_1066	Roadbed tribological energy harvester BAODONG Chen Enhancing Triboelectric Nanogenerators Performance with MXenes -Silicone Nanocomposites: A Leap Forward in Energy Harvesting and Touch-Sensitive Technologies
16:30	02_1097	MADATHIL Navaneeth
16:30	03_1426	Energy harvester and storage multifunctional supercapacitor and their performance KUMAR Mukesh
16:30	04_1517	Thermally drawn flexible polymer-based triboelectric nanogenerator fibers for rotational energy harvesting applications Bakuer Kayra Guney
16:30	05_1741	Integration of Vanadium-based Oxides in Piezoelectric Nanogenerators for Self-Powered Sensing ONURALP Deniz Berk
16:30	06_2119	MXene-PEDOT:PSS Hybrid Nano-Engineered Gold Electrodes for Sustainable Electrochemical Sensing of Waterborne Hepatitis Virus MANDAL Mukti
16:30	07_2126	Triethylsilyl-Protected Phenolic Derivative Enabled Smart Fluoride Sensor for On-Site and Sustainable Drinking Water Quality Monitoring MUKHERJEE Bimalendu
16:30	08_2156	Highly Stretchable n-Type Bi ₂ Te ₃ Thermoelectric Core-Spun Yarn for Self-Powered Smart Textile Sensing PARK Hyeonjoo
16:30	09_2178	Multilayer Piezoelectric Polymer Fibers Enabled by Thermal Drawing for Tactile Sensing in Prosthetic Interfaces SINGH Vishwa Pratap
16:30	10_2243	Defect-Engineered Carbon-Silica Core-Shell Nanospheres for High-Performance Textile Triboelectric Nanogenerators DEMIRCIOGLU Onur
16:30	11_241	SLIPS-TENGs: fluorine-free triboelectric nanogenerators with liquid infused porous surfaces as highly slippery drop energy harvesters operating in harsh environments NÚÑEZ GÁLVEZ Fernando
16:30	12_2765	Engineering PTFE Like Sputtered Films for Enhanced Drop Driven Triboelectric Nanogenerators DELGADO-ALVAREZ Juan
16:30	13_3088	rGO Composite Aerogels for Robust Conductive Networks in Deformable Electronics CHOI Hyeonho
16:30	14_3337	TENGs for Bubble Detection and Energy Harvesting in Fluid Flows CONDE Guilherme
16:30	15_351	Coupled Tribovoltaic-Like and Electrochemical Effects in AI/PDMS-Liquid Systems for Self-Powered Applications WANG Ruey-Chi
16:30	16_529	Seeing Breath Through Smart Optical Fibers Pillalamarri Srikrishnarka

16:30	17_709	A micro-fabricated potentiometric platform with application in a COVID-19 drug quantification and the determination of its binding affinity to a supramolecular host ALI Nada
16:30	18_948	High performance protein/electrolyte composite for moisture enable green power source PRAMANIK Subhamay
11:15	19_981	Material Stack Discovery for BEOL-Compatible Quantum Electronic Nose AGARWAL Abhineet

Wednesday May 27
109 Nanogenerators & SS 9

Chairperson(s): **WICKLEIN Bernd**

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08:30	3383	Efficient signal rectification for high-efficiency triboelectric nanogenerators BASSET Philippe (Invited)
08:55	29	Upcycled biomass-based skin-integrated triboelectric sensors WU Wenzhuo (Invited)
09:20	397	Theory of Triboelectric Nanogenerators: Vision for a Universal Approach DHARMASENA Ishara
09:35	1980	Long-Term Environmental Stability of WS ₂ Triboelectric Textiles for Self-Powered Sweat Biosensing ALBUQAMI Mashael
09:50	2706	Electrospun PEDOT:PSS Nonwovens for Multifunctional Wearable Sensing Applications SLEJKO Emanuele Alberto

Wednesday May 27
110 Nanogenerators & SS 10

Chairperson(s): **WU Wenzhuo**

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10:30	291	Piezoelectric nanogenerators from 3D printed bionanocomposites WICKLEIN Bernd (Invited)
10:55	396	New directions in droplet-based triboelectric nanogenerators GOLOVIN Kevin (Invited)
11:20	2922	Machine Learning-Based Surrogate Modeling of Triboelectric Nanogenerators MISHRA Shashank
11:35	3257	Ferroelectric Nematic Liquid Crystals as Active Polar Media for Energy Harvesting and Self-Powered Sensing BORA Kaustav Jit
11:50	358	Vacuum Filtration-Assisted Assembly of PVA/MWCNT Hydrogels for Tough, Fatigue-Resistant Strain Sensors KUANG Hekun

Wednesday May 27
111 Nanogenerators & SS 11

Chairperson(s): **BASSET Philippe**

GOLOVIN Kevin

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13:45	393	How to Link Textiles with Nanogenerators - Optimisation of Textile TENG for Health Monitoring DHARMASENA Ishara (Invited)
14:10	1354	Sustainable approaches in developing materials and devices for mechanical energy harvesting PEREIRA Luis (Invited)
14:35	155	Structure design of flexible piezoelectric composite for energy harvesting and self-powered sensing ZHANG Qilong
14:50	1124	Two-Step Hydrothermal Synthesis of Vertically Aligned (Ba,Ca)(Zr,Ti)O ₃ Nanorod Arrays for Energy Harvesting WEI Chih-Kuan
15:05	1150	Glancing Angle Deposition of Halide Perovskite Nanowalls for Light- Responsive Piezoelectric Nanogenerators DELGADO-ALVAREZ Juan
15:20	571	Sustainable and Multi-Responsive Shape Memory Foams for Adaptive Human-Machine Interaction and Intelligent Monitoring Systems HU Dongdong

Thursday May 28
112 Nanogenerators & SS 12

Chairperson(s): **OLIVEIRA Joana**

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08:30	3047	Research Collaborations Driving Energy Harvesting TRL progression for IoT Ecosystem STAAL Henrik (Invited)
08:55	478	Smart sensing and computing based on piezoelectric and ferroelectric lanthanide-doped luminescence HAO Jianhua (Invited)
09:20	671	Flexible and Stretchable Electrochromic Energy Storage Devices with Viologens PARK Jong Seung
09:50	3346	Electroactive Electrospun Nonwovens for wearable sensing SMERIERI Marco

Thursday May 28
113 Nanogenerators & SS 13

Chairperson(s): HAO Jianhua
 RUSU Cristina

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10:30	3089	Contact-Electro-Catalysis under Mechanical Excitation: From Ultrasound-Driven Interfacial Charge Generation to Dual-Pathway Nitrogen Fixation HUANG Liangliang (Invited)
10:55	26	Water-Evaporation-Driven Electrokinetic Power for Hybrid Aqueous Battery Systems OLIVEIRA Joana (Invited)
11:20	3361	Importance of uniform layer thickness in polymer-based triboelectric nanogenerators EGINLIGIL Mustafa
11:35	3312	Synergistic integration of water wave concentration and pendular TENGs for boosted blue energy ROUXINOL Guilherme
11:50	3016	Characterization of liquid-solid contact electrification for a droplet-based triboelectric nanogenerator MONLUC Hadrien

Thursday May 28
114 Nanogenerators & SS 14

Chairperson(s): HUANG Liangliang
 RAPP Bastian e.

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13:45	444	Energy Harvesting Technologies for Self-powered Sensor Applications HAJRA Sugato (Invited)
14:10	504	Triboelectric devices for fast, stable, self-powered wearable electronics TANG Wei (Invited)
14:35	2793	Processing of Smart Porous Electro-ceramic Transducers (ProSPECT) BOWEN Chris (Invited)
15:00	1628	Functional Duality of Self-Powered ZnCdO:Eu Photodetectors: Ultrafast Pyro-Phototronic Enhancement and Multi-Timescale Carrier Dynamics PERLIKOWSKI Igor
15:15	1691	New Triboelectric Material with Adjustable Porosity – Fluoropor: An Analysis on the Influences of Porosity, Roughness and Mechanical Properties on the Output of TENGs Dreher Franziska
15:45	685	Nitrogen-Doped Two-Dimensional MXene for High-Output and Stable Thermoelectric Devices PARK Ji Young

Thursday May 28
115 Nanogenerators & SS 15

Chairperson(s): HAJRA Sugato
 TANG Wei

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16:30	434	Recent trends in scholarly publishing: Perspectives from an Elsevier publishing professional DOS SANTOS Kayla (Invited)
16:55	1017	Label-free sensing of chemical toxins with field-effect transistors SHARMA Menka
17:10	2250	Enhancing Triboelectric Performance of Textile-Based Energy Harvesters via iCVD-Synthesized Fluoropolymer Coatings BAYRAM Barkin
17:25	2275	Exploring the optical sensing enhancement with Annealed Piezoelectric Peptide Microrods GAN Rongcheng
17:40	2460	When Silk Meets ZIF-67: A Sustainable Route to High-Performance Triboelectric Energy Harvesting CHAKRABORTY Sayan
17:55	2477	Asymmetric electrode strategy for flow-electric fields matching and efficient wave energy harvesting LIU Hangchen
18:10	2140	Plasmon-Pyroelectric Synergy through Au Nanoconfinement in PVDF Nanofibers for Multispectral Energy Harvesting and Wearable Self-Powered Biomedical Sensors NASKAR Sudip

Friday May 29
116 Nanogenerators & SS 16

Chairperson(s): WEN Yuchen

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08:30	570	Control of Light Detection using 2D heterostructure from Visible to Mid-infrared LIM Seong Chu
08:45	969	Rationally Assembled Carboxylated g-C ₃ N ₄ and Partially Reduced Graphene Oxide 2D/2D Heterostructures interface based Aptasensor for Neomycin and Ampicillin Detection in Dairy Products SINGH Gajendar
09:15	1806	Dual-Regime Optical Sensing via Engineered CaMoO ₄ :Tb ³⁺ /Eu ³⁺ phosphors TYAGI Astha
09:30	2930	Hydrogel-Integrated Epidermal Biosensors for Multi-Analyte Sweat Analysis in Renal Health Monitoring RODTHONGKUM Nadnudda

Friday May 29

I17 Nanogenerators & SS 17

Chairperson(s): RODTHONGKUM Nadnudda

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10:30	1938	Development of Mussel-Inspired Carboxymethyl Cellulose Hydrogel Doped with PEDOT:PSS for Sensing Uric Acid Levels in Human Sweat WEN Yuchen (Invited)
11:00	663	Miniaturized Flexible Ion-Gel Pressure Sensors Based on Gradual Electric Double Layer Formation LEE Seonjeong
11:30	2873	Development of Natural Rubber Graphene Nanocomposite Foam GHOSH Akash