

Program

the 6th International Conference
on Nanogenerators and Piezotronics



Monday June 20 2022

Planned program for the conference NGPT 2022 online CET Central European Summertime. Some deviations to the program may occur. See the actual program on the website www.ngpt2022.org

Livestreaming from studio: zoom link: <https://miun-se.zoom.us/j/68793788146>

- 08:00-08:30 **Opening ceremony** Prof. ZL Wang, Associate Prof. Renyun Zhang, Prof. Kaarlo Niskanen and Prof. Håkan Olin Mid Sweden University
- 08:30-09:15 **Keynote 1: Prof. Sang-Woo Kim**, Triboelectric nanogenerator as a new energy solution for body-implantable medical devices and pathogen inactivation
- 09:30-10:15 **Keynote 2: Prof. Jun Chen**, Smart Textiles for Personalized Health Care
- 10:15-11:00 **Keynote 3: Prof. Philippe Basset**, Bennet doubler circuits with single or anti-phase TENG(s)
- 11:00-12:00 Poster session 01, separate zoom link: <https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09>
- 11:00-11:07 A self-powered signal rope based on triboelectric nanogenerator towards diving safety
Kun Jiang; Cong Zhao; Zian Qian; Bin Ge; Yawei Wang; Minyi Xu
- 11:07-11:14 A study of triboelectric charge behavior through the cryogenic triboelectric measurement
Da Woon Jin; Jong Hoon Jung

- 11:14-11:21 Advantageous utilization of triboelectric effect based electric signal generation in engineering fields
Dongwhi Choi; Kwun-Bum Chung
- 11:21-11:28 Role of elastic modulus in triboelectrification of identical P(VDF-TrFE) polymers
Dong Geun Jung; Young Joon Ko; Jong Hoon Jung
- 11:28-11:35 Self-Adapting and Self-powered Sensors Based on Electrochemical-Triboelectric Hybridized Mechanism
Xiaoting Ma; Jingyi Gao; Jiaming Zhou; Dong-Myeong Shin
- 11:35-11:42 Switchable power generation in triboelectric nanogenerator enabled by controlled electrostatic discharge
Jiaming Zhou; Xiaoting Ma; Eunjong Kim; Jingyi Gao; Dong-Myeong Shin
- 11:42-11:49 A superhydrophobic cellulose based triboelectric material for liquid energy harvesting
Bin Luo; shuangfei wang; Shuangxi Nie
- 11:49-12:00 A self-powered gas sensors system based on conductive wood for food-quality assessment
Chenchen Cai; shuangfei wang; Shuangxi Nie
- 12:00-13:30 Triboelektric Nanogenerators 1: fundamentals, Parallel session 1**
Moderator: Yunlong Zi separate zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUsK0ZBWLc5Zz09>
- 12:00-12:25 The self-powered nanosystem based on triboelectric nanogenerator and smart materials
Xiangyu Chen

12:25-12:50 A dynamic model of electromechanical conversion based on TENG and the related application

Yi Xi

12:50-13:05 Achieving Ultrahigh Output Energy Density of Triboelectric Nanogenerator in High-Pressure Gas Environment

Jingjing Fu; Yunlong Zi

13:05-13:20 Density of Surface States: Another Key Contributing Factor in Triboelectric Charge Generation

Guoqiang Xu; Yunlong Zi

12:00-13:30 Triboelectric nanogenerators 3: Self-powered sensors and devices.,
Parallel session 2

Moderator: Chengkuo Lee: zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

12:00-12:25 A TENG-based Neuromorphic tactile Sensor System

Zhi-Bin Zhang

12:25-12:50 Advances in Self-Powered Triboelectric Pressure Sensors

Xuhui Sun

12:50-13:05 A Bioresorbable Dynamic Pressure Sensor for Cardiovascular Postoperative Care

Zhe Li

13:05-13:20 A paper based human-machine interface: Towards fully green and recyclable Internet of Things

Jesper Edberg; Ulrika Linderhed; Yusuf Mulla; Robert Brooke; Sandra Pantzare; Jan Strandberg; Andreas Fall; Konstantin Economou; Valerio Beni; Astrid Armgarth

12:00-13:30 Piezoelectric nanogenerators 2: micro nano power sources, Parallel session 3

Moderator: Wenzhuo Wu, zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxiMHE1VTdkYldXZz09>

12:00-12:25 Direct-current triboelectric nanogenerators based on electrostatic breakdown

Jie Wang; Di Liu; Zhihao Zhao; Zhong Lin Wang

12:25-12:50 Environment-adaptive Triboelectric Nanogenerators for Wearables

Jiaqing Xiong

12:50-13:05 A highly efficient constant-voltage triboelectric nanogenerator

Xinyuan Li; Jie Wang; Zhong Lin Wang

13:05-13:20 Boosting current output of triboelectric nanogenerator by two orders of magnitude via hindering interfacial charge recombination

Irum Firdous; Muhammad Fahim; Lingyun Wang; Wen Jung Li; Yunlong Zi; Walid A. Daoud

13:45-15:00 Triboelectric Nanogenerators 1: fundamentals, Parallel session 1

Moderator: Renyun Zhang: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUsK0ZBWIc5Zz09>

13:45-14:10 High-Performance Triboelectric Nanogenerator and Tribophotonics

Yunlong Zi

14:10-14:35 Cellulose as a triboelectric material

Magnus Norgren; Christina Dahlström; Alireza Eivazi; Orlando Rojas; Bruno Medronho; Renyun Zhang

14:35-14:50 A New Triboelectric Nanogenerator with Excellent Electric Breakdown Self-Healing Performance

Zhipeng Wu; Rong An; Yijun Shi

13:45-15:00 **Triboelectric nanogenerators 3: Self-powered sensors and devices.,**
Parallel session 2

Moderator: Xiong Pu: zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

13:45-14:10 Advances in Triboelectric Human-Machine-Interfaces

Chengkuo Lee

14:10-14:35 Electroactive biomaterials and self-driven systems for biomedical applications

Linlin Li

14:35-15:00 An anemograph inspired triboelectric nanogenerator for contaminative and high temperature exhaust gas flow monitoring on ships

Minyi Xu; Fangyang Dong; Taili Du; Meixian Zhu; Ziyue Xi; Yongjiu Zou; Peiting Sun

13:45-15:00 **Triboelectric nanogenerators 3: self-powered sensors and devices,**
Parallel session 3

Moderator: Minyi Xu. zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>

13:45-14:10 Magnetic-controlled 3D Structure and Self-Powered Applications

Haixia Zhang

14:10-14:35 From triboelectric nanogenerators and electronic skins to actively-perceiving soft robots and autonomous flexible applications

Ying-Chih Lai

14:35-15:00 Enhanced Streaming Vibration Potential by Silane-Modified MXene/PVA Hydrogel for High-Performance Flexible Triboelectric Nanogenerator

Bo-Yu Lai; Jyh Ming Wu

15:00-16:00 **After Conference session**, zoom link: <https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09>

Tuesday June 21 2022

08:00-09:20 **Triboelectric Nanogenerators 1: fundamentals**, Parallel session 1

Moderator: Jianhua Hao. zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFcldReFVCUUsK0ZBWlc5Zz09>

08:00-08:25 Understanding Contact Electrification at Liquid-Solid Interfaces from Surface Electronic Structure

Bolong Huang

08:25-08:50 Theory and Optimization of Spherical Nanogenerators

Morten Willatzen; Jens Gravesen; Jiajia Shao; Zhong Lin Wang

08:50-09:05 Highly-stable 2D-layered halide perovskite embedded in a polymer matrix for development of robust nanogenerator

Swathi Ippili; Venkatraju Jella; Soon-Gil Yoon

09:05-09:20 Highly positive triboelectric material induced by controlling local dipole

Donghyeon Kang; Jihye Kim; Sang-Woo Kim

- 08:00-09:20** **Triboelectric nanogenerators 3: Self-powered sensors and devices, Parallel session 2**
- Moderator: Dukhyun Choi: zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjllc2xBbUFPYktjYU5palgvUT09>
- 08:00-08:25 Flexible mechano-to-electrical energy conversion materials and devices
Xiong Pu
- 08:25-08:50 Marine self-powered sensors based on triboelectric nanogenerator
Minyi Xu; Yongjiu Zou; Hao Wang; Taili Du; Peiting Sun
- 08:50-09:05 A single-channel and patterned triboelectric sensor for multipurpose human-machine interface
*Zhiping Feng; Jin Yang**
- 09:05-09:20 Hybrid PDMS-TiO₂-stainless steel textiles for triboelectric nanogenerators and applications in infrared rays wireless communication
Gang Jian; Qingzhen Meng; Ning Yang; Shangtao Zhu
- 08:00-09:20** **Triboelectric nanogenerators 3: self-powered sensors and device, Parallel session 3**
- Moderator: Linlin Li: zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>
- 08:00-08:25 Self-Powered Human-Machine Interacting Sensors
Yanchao Mao
- 08:25-08:50 Novel bidimensional technologies for neural interfaces
Elena del Corro
- 08:50-09:05 Machine learning triboelectric textile system for multimodal objects identification

Shujia Xu; Wenzhuo Wu

09:05-09:20 High-Performance Triboelectric Lignin Films for Self-Powered Wearables Devices

ROBERT CCORAHUA; Wenzhuo Wu

09:35-11:00 Triboelectric Nanogenerators 1 & 2: fundamentals and micro nano power sources, Parallel session 1

Moderator: Xianyu Chen; zoom link: <https://miunse.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUsK0ZBW1c5Zz09>

09:35-10:00 Fundamental mechanism of mechano-electronic excitation and DC transport at dynamic semiconductor heterojunctions

Jun Liu

10:00-10:25 Cellulose-based high performance triboelectric nanogenerators

Renyun Zhang

10:25-10:40 Investigation on the Origin of Tribo-negative Nature of Polytetrafluoroethylene: First-Principles Study

Sera Jeon; Dabin Kim; Sang-Woo Kim

10:40-10:55 Achieving ultrahigh instantaneous power by leveraging the opposite-charge-enhanced transistor-like triboelectric nanogenerator (OCT-TENG)

Hao Wu

09:35-11:00 Triboelectric nanogenerators 3: Self-powered sensors and devices, Parallel session 2

Moderator: Yan Zhang; zoom link: <https://miunse.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

09:35-10:00 Self-powered Medical Devices and Electrical Stimulation Therapy

Zhou Li

10:00-10:25 Self-Powered Triboelectric Pressure Sensors

Zhen Wen

10:25-10:40 Scalable production of functional dielectric layers for tribo-electric nanogenerator sensors

Nachiket Vatkar; Wenzhuo Wu

10:40-10:55 Smart ping pong paddle of triboelectric self-powered wireless sensors based on surface functionalization of polydimethylsiloxane film

Sz-Nian Lai; Hung-Tse Hsu; Wen-Hsin Chiu; Jyh Ming Wu

09:35-11:10 Hybridized nanogenerators, Parallel session 3

Moderator: Chi Zhang: zoom link: <https://miunse.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>

09:35-10:00 Hybridized and coupled nanogenerators

10:00-10:25 Self-Powered Nanomaterials, Devices and Systems for Healthcare and Environmental Applications

Zong-Hong Lin

10:25-10:40 A Dual-rotation Shaft Hybrid Triboelectric Nanogenerator for Broadband Highly Efficient Wind Energy Harvesting

Boyu Zhu; Shun Yong; Han Wu; Ruijin Liao; Jiyu Wang

10:40-10:55 Foot-strike-actuated Triboelectric-electromagnetic Hybridized Nanogenerator for Biomechanical Energy Harvesting

Tiago Alves; Cátia Rodrigues; Cândido Duarte; João Ventura

- 10:55-11:10 Performance-enhanced stretchable piezoelectric nanogenerator based on multi-stacked flexoelectric ZnAl:LDH nanosheets and piezoelectric ZnO nanorods
Chongsei Yoon; Venkatraju Jella; Swathi Ippili; Giwan Yoon; Soon-Gil Yoon
- 11:00-12:00 **Lunch**
- 11:00-12:00 **Poster session 02**, zoom link: [zoom link: https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09](https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09)
- 11:00-11:06 Aramid nanofiber aerogel-based Triboelectric Nanogenerator for enhanced output in harsh environments
Shuangxi Nie; Mingchao Chi; shuangfei wang
- 11:06-11:12 Control of the triboelectric charge density of cellulose nanofibrils by chemically tailored molecular surface modification
Yanhua Liu; Shuangxi Nie
- 11:12-11:18 Peeled-off polydimethylsiloxane film-based triboelectric nanogenerator for understanding the mechanism of triboelectrification
Huidrom Hemojit Singh; Da Woon Jin; Jong Hoon Jung
- 11:18-11:24 Autonomous interacting triboelectric system for simultaneous water harvesting and power generation
Song Zhang; shuangfei wang; Shuangxi Nie
- 11:24-11:30 Porous ZnO thin films on paper substrates for the development of piezoelectric nanogenerators and self-powered sensors
Xabier García-Casas; Francisco Aparicio; Jorge Budagosky; Ali Ghafarinejad; Juan Sanchez-Valencia; Angel Barranco; Ana Borrás
- 11:30-11:36 Polarity controlled and soft triggered highly durable direct current triboelectric Nanogenerator

Jae Yeon Han; Huidrom Hemojit Singh; Jong Hoon Jung

11:36-11:42 Porous PDMS conformable coating for high power output carbon fibers-based single electrode triboelectric energy harvesters

Raquel Barras; Andreia dos Santos; Elvira Fortunato; Rodrigo Martins; Hugo Águas; Rui Igreja; Pedro Barquinha; Luís Pereira

11:42-11:48 Bioinspired Soft Electroreceptors for Artificial Pre-Contact Somatosensation

Zi Hao Guo; Hai Lu Wang; Jiajia Shao; Xiong Pu; Zhong Lin Wang

11:48-12:00 Application of cellulosic materials in triboelectric nanogenerators for a completely biodegradable TENG

Haider Iftikhar; Maryam Borghei; Alireza Eivazi; Christina Dahlström; Magnus Norgren; Orlando Rojas

12:00-13:30 Triboelectric Nanogenerators 2: micro nano power sources, Parallel session 1

Moderator: Zhen Wen zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUJsK0ZBWlc5Zz09>

12:00-12:25 Ultimate output and energy management of triboelectric nanogenerator

Chenguo Hu

12:25-12:50 Tribotronics: an Emerging Field by Coupling Triboelectricity and Semiconductor

Chi Zhang

12:50-13:05 Energy scavenging from the mechanical resource using piezoelectric and triboelectric nanogenerators

Dong-Myeong Shin

13:05-13:20 Electrostatically triggered autonomous self-healable and stretchable hydrogel for wearable electronics

Irum Firdous; Muhammad Fahim; Walid A. Daoud

12:00-13:30 **Triboelectric nanogenerators 3: Self-powered sensors and devices, Parallel session 2**

Moderator: Wenshuai Chen zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

12:00-12:35 Mechanical Energy Conversion and Transmission Systems for High-efficient Triboelectric Nanogenerators (TENGs)

Dukhyun Choi

12:35-13:00 Intelligent diagnosis of lubricating oil condition based on triboelectric nanogenerator

Jun Zhao; Di Wang; Yijun Shi

13:00-13:15 Smart textile triboelectric nanogenerators

Kai Dong

13:15-13:30 Triboelectric Nanogenerator for Car Detection using RF Transmission Based on a Plasma Switch

Ahmad Delbani; Dimitri Galayko; Malal Kane; Philippe Basset

13:45-15:00 **Triboelectric Nanogenerators 2: micro nano power sources, Parallel session 1**

Moderator: Jie Wang Zoom link: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVfdReFVCUUJsK0ZBWlc5Zz09>

13:45-14:10 Omnidirectional textile-based triboelectric energy harvesting for wearable applications

Steve Beeby; Watcharapong Paosangthong

- 14:10-14:25 High performance triboelectric nanogenerators based on electrospun PVDF-HFP/liquid metal nanofibre membrane
Jin Zhang; Zhao Sha
- 14:25-14:40 Hybridizing triboelectric and thermomagnetic effects: a novel low-grade thermal energy harvesting technology
Cátia Rodrigues; Ana Pires; Isabel Gonçalves; Daniel Silva; Joana Oliveira; André Pereira; João Ventura
- 14:40-15:00 Ultrasound-triggered triboelectric nanogenerator for powering on-demand transient electronics
Dong-Min Lee; Sang-Woo Kim
- 13:45-15:00 Hybridized nanogenerators, Parallel session 3**
Moderator: Chang Kyu Jeong: zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>
- 13:45-14:30 Synergistic Energy Harvesting by Composites of Flexoelectric Zn:Al-LDH Nanosheets and Piezoelectric MAPbI₃ and ZnO Films
Giwan Yoon; Chongsei Yoon; Swathi Ippili; Venkatraju Jella; Soon-Gil Yoon
- 14:30-14:45 Eco-friendly, biomass nanogenerators based on polysaccharide nanocomposites
Bernad Wicklein; Raul Castellano-Perdomo; Jaime González-Gómez; Mohammed Alkolaibi; Harvey Amarin
- 14:45-15:00 Plasma engineering of microstructured piezo – triboelectric hybrid nanogenerators for wide bandwidth vibration energy harvesting
Xabier García-Casas; Ali Ghafarinejad; Francisco Aparicio; Javier Castillo-Seoane; Carmen Lopez-Santos; Juan Pedro Espinós; José Cotrino; Juan Sanchez-Valencia; Angel Barranco; Ana Borrás
- 13:45-15:30 Triboelectric nanogenerators 3: Self-powered sensors and devices, Parallel session 2**

Moderator: Yijun Shi. zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

- 13:45-14:10 Scalable nanomanufacturing of biomass based triboelectric wearable sensors
Wenzhuo Wu
- 14:10-14:35 Smart Sensors for Multiple Mechanical Stimuli Recognition
Youfan Hu
- 14:35-14:50 Using solid-liquid triboelectric nanogenerator for coating wear condition monitoring
Di Wang; Jun Zhao; Fan Zhang; Jinshan Pan; Per Claesson; Rong An; Yijun Shi
- 14:50-15:30 Ultrasound-driven triboelectric nanogenerator with implantable, modulus tunable hydrogel
Bosung Kim; Sang-Woo Kim
- 15:00-16:00** **After Conference session**, *<https://miun-se.zoom.us/j/66616349942?pwd=ZWlBQVRtNDBlRVNWUjhCQWJqNTB3dz09>*

Wednesday June 22, 2022

08:00-09:30 **Triboelectric Nanogenerators 2: micro nano power sources, Parallel session 1**

Moderator: Yanchao Mao: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUJsK0ZBWlc5Zz09>

08:00-08:15 Surface modified thermoplastic polyurethane and poly(vinylidene fluoride) nanofiber based flexible triboelectric nanogenerator and wearable bio-sensor

Sk Shamim Hasan Abir; Karen Lozano; Mohammed Jasim Uddin

08:15-08:30 Porous PDMS conformable coating for high power output carbon fibers-based single electrode triboelectric energy harvesters

Raquel Barras; Andreia dos Santos; Elvira Fortunato; Rodrigo Martins; Hugo Águas; Rui Igreja; Pedro Barquinha; Luís Pereira

08:30-08:45 Performance enhancement of triboelectric nanogenerator through hole and electron blocking layers-based interfacial design

Irum Firdous; Muhammad Fahim; Walid A. Daoud

08:00-09:30 Piezotronics and piezo-phototronics, Parallel session 3

Moderator: Weiguo Hu: zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=elVScWZ2N2dRTGxjMHE1VTdkYldXZz09>

08:00-08:25 High resolution Dynamic Real-time Imaging of Living Cell Traction Force by Piezophototronic effect

Junyi Zhai; Zhou Li; Zhong Lin Wang

08:25-08:50 Development and application of dual-mode piezo-gated thin film transistor

Chuan-Pu Liu; Jit Dutta

08:50-09:05 Bifunctional interfacial engineering for piezo-phototronic enhanced photovoltaic performance of wearable perovskite solar cells

Muhammad Fahim; Irum Firdous; Walid A. Daoud

09:05-09:20 Bioinspired Intelligent Power Devices

Qilin Hua

08:00-09:45 Triboelectric nanogenerators 3: Self-powered sensors and devices, Parallel session 2

Moderator: Zhibin Zhang

zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

- 08:00-08:25 Transparent triboelectric nanogenerator using cellulose as sustainable building block for touching recognition
Wenshuai Chen; Shuhan Xu
- 08:25-08:50 A bio-inspired and self-powered triboelectric tactile sensor for underwater vehicle perception
Minyi Xu; Peng Xu; Jianhua Liu; Xinyu Wang; Siyuan Wang
- 08:50-09:15 Sound-driven triboelectric nanogenerators: structure design, power management and self-powered multifunctional sensors
Haiwu Zheng; Yonghui Wu; Jiawei Zhang; Zhixin Wang; Hongbo Yao
- 09:15-09:30 Virus blocking textile for SARS-CoV-2 powered by human body triboelectric energy harvesting
Minki Kang; Young-Jun Kim; Byung-Ok Choi; Nam-Hyuk Cho; Sang-Woo Kim
- 09:30-09:45 Triboelectrification induced self-powered microbial disinfection using nanowire-enhanced electric field
Young-Jun Kim; Sang-Woo Kim
- 09:35-11:00 Triboelectric Nanogenerators 2 & 3: micro nano power sources, self powered sensors and devices, Parallel session 1**
Moderator: Bolong Huang: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUJsK0ZBWlc5Zz09>
- 09:35-10:00 Triboelectric Potential Driven FETs for Interactive Neuromorphic Synaptic Devices and Systems
Qijun Sun
- 10:00-10:25 Wireless Self-Powered Sensor Systems and Their Applications in Healthcare Monitoring

Yannan Xie

10:25-10:40 Using triboelectric nano-generator for high-frequency vibration monitoring

Idiris Mehamud Aliyi; Yijun Shi; Marcus Björling; Pär Marklund

10:40-10:55 Wearable and energy autonomous biosensors for healthcare: proof of concept graphene-based pH sensor

Maria Del Pilar Bernícola; Jose Antonio Garrido; Elena del Corro

09:35-11:00 Triboelectric nanogenerators 4: Blue Energy, Parallel session 2

Moderator: Qijun Sun zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

09:35-10:00 Design, fabrication, and evaluation wave driven triboelectric nanogenerator guided by computational fluidic dynamics

Yunzhong Wang

10:00-10:15 Harvesting raindrop energy in harsh environments: Integrating triboelectric nanogenerator (TENG) with slippery lubricant-infused surfaces (SLIPS)

Yi Lu; Zhixiang Chen; Orlando Rojas; Qingxia Liu

10:15-10:30 Performance assessment of triboelectric nanogenerators based on rolling spheres motion in realistic sea states

Cátia Rodrigues; Marco Ramos; Ricardo Esteves; José Correia; Daniel Clemente; Filipe Gonçalves; Nuno Mathias; Miguel Gomes; Joana Silva; Cândido Duarte; Tiago Morais; Paulo Rosa-Santos; Francisco Taveira-Pinto; André Pereira; João Ventura

09:35-11:00 Piezotronics and piezo-phototronics, Parallel session 3

Moderator: Gustavo Ardila: zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>

- 09:35-10:00 Piezotronics and piezo-phototronics of hybrid perovskite ferroelectric thin-films for enhanced photoresponse
Jianhua Hao
- 10:00-10:25 Development and applications of p-n junction nanogenerators: from screening to hybrid energy harvesters
Joe Briscoe
- 10:25-10:40 Energy loss of surface plasmon polaritons on silver nanowire waveguides
Wenhui Wang
- 10:40-10:55 High-performance pyroelectric ceramics for thermal energy harvesting and sensing applications
Chris Bowen; Qingping Wang
- 11:00-12:00** **Poster session 03**, zoom link: <https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09>
- 11:00-11:07 Exploring the behavior of frictional heat along with material transfer during friction through real-time measurement
Dae Sol Kong; Dong Woo Lee; Jong Hoon Jung
- 11:07-11:14 Flexible Textile Direct-Current Generator Based on the Tribovoltaic Effect at Dynamic Metal-Semiconducting Polymer Interfaces
Jia Meng; Zi Hao Guo; Chongxiang Pan; Luyao Wang; Caiyun Chang; Longwei Li; Xiong Pu; Zhong Lin Wang
- 11:14-11:21 Highly Sensitive Self-powered Pressure Sensors over a Wide Pressure Range Enabled by Tailoring Free Volume of Cellulosic Triboelectric Materials
Shuangxi Nie; Jinlong Wang; Yanhua Liu

11:21-11:28 High Resolution Intelligent Tactile System Based on Piezo-phototronic Effect

Rongrong Bao

11:28-11:35 Green synthesis of flexible, slippery and transparent fluorinated-PDMS coating by spontaneous polymerization for TENG and solar cell integration

Zhixiang Chen; Yi Lu; Xuyang Liu; Jingqiao Li; Qingxia Liu

11:35-11:42 Enhancement on Degradation of Organic Dye through Piezophototronic Activities by High Entropy Oxide-(CaZrYCeCr)O₂ / Bi₄Ti₃O₁₂ Nanocomposite

Shun Cheng Chang; Jyh Ming Wu

11:42-11:49 Enhancing the Charge Density of Triboelectric Nanogenerator via Charge Traps from Photon-Generated Carriers

Fayang Wang; Xin Chen; Peng fan Wu; Daqiao Tong; Yanjun Zhao; Xiaojing Mu

11:49-12:00 Development and Application of Triboelectric Sensors in the Industrial Technology

Tinghai Cheng; Jianlong Wang; Xiaosong Zhang; Xiang Li; Zhong Lin Wang

12:00-13:30 Piezoelectric nanogenerators 3: Self-powered sensors and devices,
Parallel session 1

Moderator: Joe Briscoe: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFdReFVCUUJsK0ZBWLc5Zz09>

12:00-12:25 Towards self-powered sensors based on hydraulic pressure energy harvesting

Sebastian Bader; Bengt Oelmann

12:25-12:40 Piezoelectric Micro/Nanorobots for Wireless Deep Brain Stimulation

FAN WANG; Metin Sitti

- 12:40-12:55 A Wearable Piezoelectric Sensor Based on ZnO/Liquid Metal Heterostructures for Human-Related Information Extraction
Jing Jiang; Wenzhuo Wu
- 12:00-13:30 Piezoelectric nanogenerators 1: Fundamentals, Parallell session 2**
Moderator: Steve Beeby
- 12:00-12:25 Recent Advances in Scalable Biocompatible Piezoelectric Materials and Composites toward Future Manufacturing
Xudong Wang
- 12:25-12:50 Perspectives on unconventional effects on piezoelectric energy harvesters: from ceramics to biopolymers
Chang Kyu Jeong
- 12:50-13:15 Polarity and Doping in Chemically Deposited ZnO Nanowires for Piezoelectric Nanogenerators
Vincent Consonni
- 13:15-13:30 A method for quantitatively separating the piezoelectric component from the as-received "Piezoelectric" signal
Chaojie Chen; Yunlong Zi; Cheng Yang
- 12:00-13:30 Piezotronics and piezo-phototronics, Parallel session 3**
Moderator: Junyi Zhai: zoom <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>
- 12:00-12:25 Polarization potential on electron and hole transport
Haiyang Zou
- 12:25-12:50 Possibilities offered by plasma-based magnetron sputtering processes for the synthesis of functional thin films and surfaces
Stephanos Konstantinidis

12:50-13:05 Piezotronic readout applied for magnetic field sensors

Martha Gerhardt; Sören Kaps; Jürgen Carstensen; Rainer Adelung

13:05-13:20 Super-resolution detection and imaging based on micro-/nanophotonics

Qing Yang; Zhong Wen; Xiaowei Liu; Chenlei Pang; Mingwei Tang; Qianwei Zhang; Muchun Lin; Qilin Deng; Xu Liu

13:45-15:00 Piezoelectric nanogenerators 1/2, Parallell session 2

Moderator: Jyh Ming Wu: zoom link: <https://miun-se.zoom.us/j/62899782643?pwd=RExzSjlIc2xBbUFPYktjYU5palgvUT09>

13:45-14:00 All polymer based stretchable piezoelectric nanogenerators (S-PENG) for wearable energy harvesting

Gurneet Kaur; Jagan Singh Meena; Manjeet Jassal; Ashwini Agrawal

14:00-14:15 Piezoelectric Nanogenerator Based on 2H-1T Heterostructures of MoS₂ Nanosheets

Charu Sharma; Simadri Badatya; Avanish Kumar Srivastava; Manoj Kumar Gupta

14:15-14:30 Ethylene glycol doped PEDOT:PSS for effective p-n junction based ZnO piezoelectric nanogenerator

Yuan Zhang; Qinrong He; Joe Briscoe

13:45-15:15 Piezoelectric nanogenerators 2/3, Parallel session 1: zoom link: <https://miun-se.zoom.us/j/64932488402?pwd=cDB2V0NTVFc2RlFVcUUsK0ZBZWlhc5Zz09>

13:45-14:10 The impact of free carriers and surface traps on semiconducting piezoelectric devices

Gustavo Ardila

14:10-14:35 Self-powered Flexible Devices: Piezo-sensor and microLED

Keon Jae Lee

14:35-15:00 Piezotronics in GaN

Weiguo Hu

15:00-15:15 High Humidity Resistant Flexible Hydrophobic Nanogenerator

Simadri Badatya; Charu Sharma; Natrajan Sathish; Manoj Kumar Gupta

13:45-15:15 Piezotronics and piezo-phototronics, Parallel session 3

Moderator: Vincent Consonni: zoom link: <https://miun-se.zoom.us/j/69578485611?pwd=eIVScWZ2N2dRTGxjMHE1VTdkYldXZz09>

13:45-14:10 Theory of Quantum Piezotronics for High Performance Devices

Yan Zhang

14:10-14:35 Wireless triboelectric nanogenerator and self-powered photoelectrochemical microsystem through the piezophototronic mechanism

Jyh Ming Wu

14:35-15:00 Utilization of Polymer Electrete Layers in Piezotronic Sensors and Energy Harvesting

Rainer Adelung

15:00-15:15 Self-powered Photodetector for Ultralow Power Density UV Sensing

Jianping Meng; Zhou Li

15:00-16:00 After conference session, zoom link: <https://miun-se.zoom.us/j/66616349942?pwd=ZWIBQVRtNDBIRVNWUjhCQWJqNTB3dz09>

Thursday June 23 2022

Livestreaming from studio: <https://miun-se.zoom.us/j/61004474818>

- 08:00-08:45 Keynote 4: Prof. Christian Falconi, Material Science for Nano Energy: Challenges and Solutions
- 08:45-09:30 Keynote 5: Prof. Pooi See Lee, Towards wearable mechanical energy harvestors
- 09:30-10:30 Lunch break**
- 10:30-11:15 Keynote 6: Prof. Chris Bowen, Functional composite design for energy harvesting and sensing
- 11:15-12:00 Keynote 7: Dr. Prateek Dongare, Nature and Communication
- 12:00-12:45 Keynote 8: Prof. Zhong Lin Wang, From Triboelectric Nanogenerators to Maxwell Equations for Mechano-Driven Slow-Moving Media Systems
- 12:45-13:15 Closing of conference**

Program

Planned program for the conference NGPT 2022 online
CET Central European Summertime.
Some deviations to the program may occur.
See the actual program on the website www.ngpt2022.org

6th International Conference on Nanogenerators and Piezotronics
Sundsvall Sweden June 20–23 2022

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