



European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

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SYMPOSIUM T

Nanocarbons II: from synthesis to advanced applications

Oral sessions : BRUXELLES - GROUND FLOOR

Poster sessions : ETOILE - FIRST FLOOR

Symposium Organizers:

Akichika KUMATANI, IChiba Institute of Technology, Japan

Hui-Ming CHENG, Institute of Metal Research, CAS, China

Jean-Charles ARNAULT, CEA NIMBE, France

Nianjun YANG (Main organizer), Hasselt University, Belgium

Symposium Sponsor:



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Monday May 25

T01 Nanocarbon Materials for Emerging Applications

Chairperson(s): YANG Nianjun

WANG Pengfei

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- 08:30 1015 Nanotheranostics Based on Carbon Dots for Cancer Therapy
WANG Pengfei
- 08:55 955 Conductive carbon nanotube fibers
LIU Chang
- 09:20 703 3D Printed Carbon for Flexible Electronics
GUAN Cao
- 09:45 871 Synthesis and Structure-Property Relationships of Carbon Dots
HU Yalei

Monday May 25

T02 Nanocarbon-Based and Energy Materials I

Chairperson(s): YANG Nianjun

LIU Lifeng

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- 10:25 2009 Engineering Ir-based catalysts for proton exchange membrane water electrolysis
LIU Lifeng
- 10:50 190 Interface Design for High-Performance Catalysts in Water Splitting
ZHOU Wei
- 11:15 99 Machine learning-based prediction of long-term corrosion behavior of hydrogenated amorphous carbon thin films on titanium
HARTANTO Danang Tri
- 11:30 2387 Programming the Optical Properties of SWCNTs via Controlled Radical Functionalization
DZIENIA Andrzej
- 11:45 1054 Mechanical properties of pyrocarbons from molecular dynamics calculations
PIZZAGALLI Laurent

Monday May 25

T03 Nanocarbon-Based and Energy Materials II

Chairperson(s): KUMATANI Akichika

YABU Hiroshi

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- 14:25 1128 Ion Regulations in Aqueous Batteries
HONG Guo
- 14:50 741 Electrocatalysts based on metal-complex molecules and biomass-derived carbons
YABU Hiroshi

- 15:15 2099 Electronic Properties of Neutral and Doped Strongly Confined Graphene Quantum Dots
SYKORA Milan
- 15:30 2592 Electrostatically tuneable Josephson Junctions with a Niobium-Graphene Interface
RUNTE Timon
- 15:45 2431 Polymer- and Surfactant-Guided Chirality-Selective Separation of Single-Walled Carbon Nanotubes
JUST Dominik

Monday May 25

T04 Nanocarbon-Based and Energy Materials III

Chairperson(s): ARNAULT Jean-Charles

YANG Quan-Hong

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- 16:15 3429 Advanced Carbons for Rechargeable Batteries
YANG Quan-Hong
- 16:40 756 Electrode-electrolyte interface engineering towards efficient energy storage
ZHANG Wenjun
- 17:05 2039 Interlayer Tunneling Through Pauli Walls: Double-Quantum-Dot Analogies in Crossed Graphen
VARONIDES Argyrios C.
- 17:20 1710 Manufacturing Mass-Limited Carbon Targets for Laser-Driven Ion Acceleration: From Ultrathin Freestanding Nanomembranes to LIFT-Launched Flyers
PALLA-PAPAVLU Alexandra

Tuesday May 26

T05 Optical and Quantum Functionalities of Nanoarbor Materials

Chairperson(s): ARNAULT Jean-Charles

HAENEN Ken

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- 08:30 3358 In-situ fabrication and strain effects of germanium- and tin-vacancy centres in CVD diamond
HAENEN Ken
- 08:55 75 Sub-bandgap excitation of hydrogen terminated nanodiamond as a source of hydrated electrons for the remediation of aqueous contaminants.
MAZA William
- 09:20 926 All-carbon Photonic Microbeads Based on Fluorescent Nanographenes
REALE Marco
- 09:35 2213 Tuning of Anthracene Plasmonic Properties by Peripheral Functionalization
MINI RAJENDRAN Gokul Rajendran
- 09:50 1025 Carbon Dots-inked Paper with Single/Two-Photon Excited Dual-Mode Thermochromic Afterglow for Advanced Dynamic Information Encryption
LIU Yupeng

Tuesday May 26

T06 Nanocarbon-Based Sensors and Sensing Technologies

Chairperson(s): ARNAULT Jean-Charles

LI Quan

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- 10:25 909 Diamond-based rotation sensing for biological applications
LI Quan
- 10:50 2836 Emerging Applications of Fluorescent Nanodiamonds in Semiconductor Metrology
CHANG Huan-Cheng
- 11:15 565 Nanocarbon Sensors: A Collection of Human Studies Improving Health
WEBSTER Thomas
- 11:30 1680 Pd-rGO nanocomposites as sensing materials for room-temperature conductometric hydrogen sensor dedicated to leak detection
RAJAB PACHA Salma
- 11:45 199 Diamond MEMS Magnetic Force sensor for Three-Dimensional Imaging at Room Temperature
ZHANG Zilong

Tuesday May 26

T07 Synthesis and Scalable Processing of Nanocarbon

Chairperson(s): YANG Nianjun

MAO Boyang

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- 13:35 649 Approaches to Make Layered Materials Beyond the Lab Benches
Mao Boyang
- 14:00 1065 Scalable Concentration Method for Aqueous Carbon Nanotube Dispersions
IM Jaegyun
- 14:15 1177 Liquid-Metal CVD: Operando Graphene Growth Kinetics and Synchrotron Tracking of Mo₂C Formation
REIN Valentina
- 14:30 353 Direct Fabrication of Dense Monolayer Coatings from Unpurified Crude Suspensions of Colloidal Sheets
LIU Kan
- 14:55 321 From Static to Dynamic: Hierarchical Control of Nanomaterials via Phase, Interface, and Reconstruction for Electrocatalysis
LIU Jiawei
- 15:20 2438 "Bottom-up" Synthesis of Structurally Uniform, Strongly-Confined Graphene Quantum Dots
TISOVSKY Pavol
- 15:35 3258 Design-Synthesis-Performance Framework for Advanced Nanomaterials using Continuous Flow
KELLICI Suela
- 15:50 2282 Kinetic control of in-plane order and graphenic stacking in graphene oxide: from in situ synchrotron XRD to quasi-amorphous 2D carbon films
LISCIO Fabiola

Tuesday May 26

TPO2 Poster session 2

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- 16:30 01_1016 The development of Chinese Society for Imaging Science and Technology in the field of nano-materials
ZHANG Liping
- 16:30 02_1020 Optimization of Copper substrates design for Vertical graphene based Interfacial Solar Steam Generation
BAHABRI Mohammed
- 16:30 03_1093 Synthesis and Characterization of Carbon Nanotubes Grown on PE-ALD-Derived Nickel Catalysts
TURDALIEV Temur
- 16:30 04_1187 Economical synthesis and optimization of few-layer graphene using solid carbon precursor via domestic chemical vapor deposition setup
HUSSAIN Misba
- 16:30 05_1593 Carbon Quantum Dot-Derived Highly Mesoporous Carbons for High-Rate Zinc-Ion Hybrid Capacitors
ZHANG Guoli
- 16:30 06_1668 COF-Mediated Synthesis of Multi-core-shell FeCo@Nitrogen-doped Carbon for Highly Sensitive Electrochemical Sensing of Caffeic Acid
YUNJIA Liu
- 16:30 07_1676 Preparation of Cu@C Derived from Covalent Organic Frameworks and Its Electrochemical Sensing of Acetaminophen
YONGQIANG Deng
- 16:30 08_1764 Operando Raman spectroelectrochemistry for the in-situ characterization of carbon-based nanomaterials
Fanjul-Bolado Pablo
- 16:30 09_1766 Carbon Dots from Renewable Biomass Precursors: Processing Parameters and Optical Response
SISÓ-MOLINÉ Rut
- 16:30 10_1926 Arc Welder based Synthesis of Graphene for Polymer Nanocomposite Applications As a Cost-Effective Alternative to the Flash Joule Heating Method
GHOLIZADEH Armin
- 16:30 11_2138 Synergistic Enhancement of Nitrite Sensing via Integrated NiFe@CNT and Laser-Induced Graphene Hybrid Electrode
Zhang Yuanyuan
- 16:30 12_2145 Fabrication of a CeBi-MOF/Laser-Induced Graphene Composite for Electrochemical Nitrite Sensing
Zhang Yuanyuan
- 16:30 13_2420 Entropy-Engineered Nanocarbon and Single-Atom Catalysts for ORR
Zhenhai Wen
- 16:30 14_2531 Hydrothermally Synthesized Glucose-Derived Carbon Microspheres with Tailored Structural Properties for Advanced Material Applications
OSMAN Salih Mohamed
- 16:30 15_2635 Effect of Electrical Charging on Photoluminescence and Raman Spectra of Uniform Ensembles of Strongly Confined Nanographenes
HUTAR Peter

16:30 16_2782 A Ready-to-Use Electrochemical Platform via Waste-Derived CuBDC and Electrolyte Integration for Malachite Green Detection
WU Kangbing

16:30 17_2787 Tuning d-f hybridization to mimic myeloperoxidase for microneedle-assisted targeted therapy of drug-resistant infections
TANG Dianping

16:30 18_2789 Partially Phosphatized Prussian Blue Analogues Derived Heterostructure Nanozyme for Colorimetric-Photothermal Dual-Mode Immunoassay
LAO Shuqun

16:30 19_2790 An Integrated Diamond MEMS Resonator for High-temperature Magnetic Sensing
ZHANG Zilong

16:30 20_2838 One-Step Electrolytic Synthesis of Nitrogen-Doped Carbon Dots Using Graphite Electrode in Ionic Liquid and Their LED Applications
ZHENMING Lu

16:30 21_2839 Unveiling the role of electric double-layer in sulfur catalysis for batteries
CHUANNAN Geng

16:30 22_2841 In-situ welding ionic conductive breakpoints for highly reversible all solid-state lithium-sulfur batteries
SHI Jiwei

16:30 23_2853 Research on Carbon-Based Supercapacitors with Redox-Active Electrolytes
YU Siyu

16:30 24_2881 Flexible Hydrogel-Optrode Hybrids for Spatiotemporal Mapping of Brain Chemistry In Vivo
YE Xiaoxue

16:30 25_2883 Diamond composite materials for high-performance flexible aqueous batteries
DONG Ximan

16:30 26_2900 Diamond cloth-supported NiMnOx electrodes for flexible supercapacitors
LI Changli

16:30 27_2907 Role of Al2O3 Buffer Layer in High-Temperature Carbon Nanotube Growth on SiO2/Si Substrates by CVD
ISMATOV Askar

16:30 28_2928 Temperature-Driven Catalyst Activation in Low-Temperature PECVD Growth of Carbon Nanotubes on Al2O3/SiO2/Si Substrates
MIRZAKANDOVA Sohibjamol

16:30 29_2947 Influence of Oxide Buffer Layers on Catalyst Formation and CNT Growth from PVD-Derived Ni Films
KHUDOYKULOV Ilyos

16:30 30_2965 Water-Stable CsPbBr3/ Reduced Graphene Oxide Nanoscrolls for High-Performance Photoelectrochemical Sensing of Mycotoxins
CHEN Miaomiao

16:30 31_2967 p-p stacking-driven tetraphenylethylene/graphene quantum dots heterostructure for the sensitive photoelectrochemical monitoring of hydrogen peroxide in plant
CHEN Miaomiao

16:30 32_2978 A robust antifouling self-powered electrochemical sensor based on CuOx/C@covalent organic framework
WEN Wei

16:30 33_3032 Preparation of Multi-Walled Carbon Nanorings immobilized graphene quantum dots (MWCNRs@GQDs) and application for Immunoassay
CHI Yuwu

16:30 34_3033 Assessment of the Effect of SiO2 Layer Thickness on the Quality of Carbon Nanotubes
ISMATOV Askar

16:30 35_3117 Carbon dots for singlet oxygen sensitization
IBRAYEV Niyazbek

16:30 36_3173 Textile Composite Electrodes for Wearable Energy Storage
ZHENG Zijian

16:30 37_831 Interfacial Nanoscale Photo-electrochemical Dynamics in SWNT-Nb:SrTiO3 Heterojunction Systems
TSUYUKI Taiyo

16:30 38_911 Photothermal Annealing-Enabled Millisecond Synthesis of Carbon Nanoions and Simultaneous Single-Atom Functionalization
SHIN Hamin

16:30 39_914 N or P-Doped Carbon Quantum Dots (N-CQDs or P-CQDs) Synthesized from Turkish Tea Ground Waste as Antimicrobial Agents
DIPCIN Beste

16:30 40_3423 Ion Intercalation-Induced Phase Transition in 2D In2Se3
MA Cong

16:30 41_3424 Towards realization of 1D Magnetism by CNT Encapsulated NiI2
YU Ting

16:30 42_3425 Brillouin and Raman Scattering Analysis of Spin-Phonon Correlations in Nanocarbon Heterostructures
ZHANG Vanessa Li

Wednesday May 27

T09 From On-Chip to Wearable: Nanocarbon Devices

Chairperson(s): YANG Nianjun

CHEN Ye

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- 08:30 1734 Wet Chemical Lattice Engineering of Metal Nanocrystals for Enhanced Catalysis
CHEN Ye
- 09:00 441 Development of Carbon-Based Hybrid Nanosensor for Multiparameter Sensing at Intracellular Sites
SHIRAYA Kota
- 09:15 3156 Flexible and Standalone Carbon Nanotube Fiber–Film Platforms for Wearable Sensing
ROHILLA Rohan
- 09:30 2411 Photoresponse in fully ink-jet printed SWCNT-based TFTs on flexible substrate
SINGH PARMAR Puneet
- 09:45 2945 Scalable Fabrication of Nucleobase-Functionalized CVD Carbon Nanotube Field-Effect Transistors for Sub-ppb VOC Detection
ALAM Md Masruck

Wednesday May 27

T10 Nanocarbon for Energy Storage and Catalysts

Chairperson(s): YANG Nianjun

LIU Bingbing

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- 10:25 372 High-Pressure Artificial Synthesis of Hexagonal Diamond
LIU Bingbing
- 11:15 2379 Customized covalent organic frameworks with p- and n-type repeating units as active material in energy storage device
VALENTINI Cataldo
- 11:30 3291 Laser Writing: Bio-Derived Carbon Electrodes for Sustainable Supercapacitors
BISCEGLIE Angelica
- 11:45 1061 Layered double hydroxides-derived catalyst for carbon nanotube growth: understanding the molybdenum's role
SHIN Yeon Su

Wednesday May 27

T11 Functional Nanocarbons: Reactivity and Sensing

Chairperson(s): KUMATANI Akichika

GIRARD Hugues A.

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- 13:35 2246 Photoinduced reactivity of nanodiamonds under solar-type illumination
GIRARD Hugues A.
- 14:00 2753 From impurity removal to surface passivation: chlorine–fluorine sequential treatment of detonation nanodiamonds
VIGOLO Brigitte

T-8 - Status on 19/05/2026

- 14:15 595 Ultrathin Single-Crystal Diamond NEMS Cantilevers for High-Sensitivity Nanomechanical Sensing
CHEN Guo
- 14:30 868 Coherent vibrational dynamics in fluorescent nanocarbons
RUBINO Riccardo
- 14:55 2916 Local microenvironment-mediated electrocatalysis
WANG Chundong
- 15:20 592 Nanoscale Structure-Reactivity Correlations in Carbon-based and Low-dimensional Materials Investigated by Scanning Electrochemical Cell Microscopy
KUMATANI Akichika
- 15:35 2484 Multivariate sensing of ions using composite 2D–3D Graphene Oxide–Hexacyanoferrate Electrodes and Machine Learning
PALERMO Vincenzo

Thursday May 28

T12 Nanocarbon for Energy and Sustainability

Chairperson(s): ARNAULT Jean-Charles

SPERANZA Roberto

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- 08:35 3248 Carbon composites for sustainable multifunctional electrodes for electrochemical energy harvesting and storage devices
SPERANZA Roberto
- 09:15 3263 Nitrogen functionalized templated porous carbons to harvest energy from CO₂ emissions
MARTELLONE Simone
- 09:30 1677 Graphene Oxide Nanosheet Membranes for High-Performance Fluorine-Free Fuel Cells
IDA Shintaro
- 09:45 2910 Photo-electrocatalytic Degradation of Reactive Blue 21 Using TiO₂ Dot Array/BDD Electrodes: Mechanism, Kinetics, and Toxicity Assessment
HAIMING Sun

Thursday May 28

T13 Synthesis and Surface Chemistry of Nanodiamonds

Chairperson(s): ARNAULT Jean-Charles

REZEK Bohuslav

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- 10:50 991 Controlling plasmonic effects and electrochemical sensing by nanodiamonds
REZEK Bohuslav
- 11:15 2158 Gold-decorated Nanodiamonds for Enhanced Photocatalytic Hydrogen Generation
BOUAOUNI Yasmine
- 11:30 1307 High-Pressure–High-Temperature Conversion Pathways from Nitrogen-Doped Diamondoids to Nanodiamonds
WU Yingke
- 11:45 708 Extreme surface chemistry of isolated nanodiamonds probed by synchrotron X-ray photoemission
ARNAULT Jean-Charles

T-9 - Status on 19/05/2026

Thursday May 28

T14 Nanocarbon-Based and Hybrid Nanomaterials for Photo-/Electrochemistry

Chairperson(s): KUMATANI Akichika

DU Heyun

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13:35	2134	High-Entropy Nano-alloys toward Electrochemical Applications WEN Zhenhai
14:00	1566	Confinement-Engineered NiCoWO ₄ /Graphene Nanoplatelets for High-Performance Supercapacitors LIU Shuang
14:15	1588	Palladium decorated graphene-based nanocomposites for the detection of sulfur dioxide: evaluating the metal NPs decoration method NDIAYE Amadou
14:30	1363	Engineering Metal-Support Interactions in Carbon Nanotube Synthesis on Supported Metal Catalysts KIM Jiwoo
14:55	198	Probing Photoelectrochemical Artificial Leaf Systems Using Scanning Probe Microscopy DU Heyun
15:20	2297	Biohybrid Photoanodes Based on <i>R. capsulatus</i> modified by Carbon Dots towards enhanced Solar-to-Electricity Conversion MATTIA Umberto
15:35	1335	Fundamental nanoscale studies of MXene electrocatalysts via correlative electrochemical and x-ray microscopies HENDERSON Lua
15:50	1502	Hydrothermal NiCo ₂ O ₄ Nanocatalysts on Carbon Cloth as Efficient Bifunctional Electrocatalyst for Alkaline HER and UOR SHAJIRATI Yasamin

Thursday May 28

T15 Electronic and Quantum Properties of 2D Carbon Materials

Chairperson(s): KUMATANI Akichika

ZHANG Hua

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16:25	256	Phase Engineering of Nanomaterials (PEN): 2D Nanomaterials ZHANG Hua
16:50	44	Graphene Two-Dimensional Topological Insulators via Interfacial Band Engineering in BiSbTeSe / Graphene van der Waals Heterostructures Tanabe Yoichi
17:15	352	Emerging Resistive Switching in Buckybowl-inserted Bilayer Graphene KAWAI Ryoichi
17:30	1753	Sustainable Preparation of Nitrogen-Doped Carbon Dots for Improved Luminescent Sensing SISÓ-MOLINÉ Rut

17:45	1466	Surface-dependent phonon dynamics in 9-atom-wide graphene nanoribbons arrays LABORDET ÁLVAREZ Ángel
18:00	1498	Exciton Localization and Dark-Bright Dynamics in Atomically Precise Graphene Nanoribbons DIMITRIEVSKA Mirjana
18:15	1574	MOCVD graphene electronic devices grown directly on sapphire FENWICK Oliver