



European Materials Research Society

2024 Spring Meeting

May 27 - 31 / Strasbourg Convention Centre

SYMPOSIUM H

Nanocarbons: from synthesis to advanced applications

Symposium Organizers:

Akichika KUMATANI, Chiba Institute of Technology, Japan

Hui-Ming CHENG, Institute of Metal Research, CAS, P. R. China

Jean-Charles ARNAULT (Main organizer), CEA NIMBE, France

Nianjun YANG, Hasselt University, Institute of Materials Research, Belgium

I.T. Research
Instruments & Information Technology

Monday May 27

H01_Advanced Applications of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : ARNAULT Jean-charles

08:45	INT1		Symposium presentation	ARNAULT Jean-Charles
09:00	291	INV	Quantum computing and sensing with diamond spins	WRACHTRUP Joerg
09:30	372	INV	Wearable biodevices using enzyme/carbon nanotube composite fibers	MIYAKE Takeo

Monday May 27

H02_Recycling and Biosourcing

LONDRES 2 - GROUND FLOOR

Chairperson(s) : LIU Chang

10:30	356	INV	Carbons from end-of-life materials as potential anode active materials	HOSSAIN Rumana
11:00	781		Upcycling of plastic bottles into hard carbon for lithium-ion batteries	YESKOZHA Dossym
11:15	1376		Effect of Pre-treatment conditions on the electrochemical performance of biowaste derived hard-carbon as anode material for SIBs.	ONIYE Mutiat Modupe

Monday May 27

H03_Tailored Growth of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : PETIT Tristan

13:45	1538	INV	Controlling diamond growth with nanometer precision	YAN Hao
14:15	616		Controllable HPHT Synthesis of Nanodiamonds from Molecular Precursors	ENDER Christopher
14:30	2619		Combination of chlorine and fluorine: surface cleaning and inorganic impurity elimination from detonation nanodiamonds by a selective gas phase purification method	VIGOLO Brigitte

14:45	2284	CNT - Bimetal (Cu and In) hybrids for field emission applications: Correlation with morphology, microstructure and electronic structure	SAINI Shubham
15:00	936	Vertically aligned carbon nanotubes on aluminum foils: development of a sustainable low-temperature synthesis process, interface study and electrochemical characterization	PINAULT Mathieu
15:15	1984	Synthesis and Characterization of Vertically Aligned Carbon Nanotubes (VACNTs) on SiC for Field Emission	GURPINAR Erhan
15:30	462	Selective Ion Bombardment of Multi-Wall Carbon Nanotubes.	TAYYAB Sammar
15:45	797	Advancing colloidal synthetic routes for carbon dots: a priori precision design of their red fluorescence	MINERVINI Gianluca

Monday May 27

H04_2D Materials

LONDRES 2 - GROUND FLOOR

Chairperson(s) : YAN Hao

16:30	3041	INV	Engineered Two-Dimensional Carbon Nitrides for Sustainable Chemical Transformations	ROY Soumyabrata
17:00	587		Terahertz-polarizing Effect Based on Geometric Anisotropy of Two-dimensional Titanium Carbide Nanosheets	LEE Changjae
17:15	2151		Defect-free Graphene Oxide with Proton-impermeable Property	TSUGAWA Tatsuki
17:30	2569		Graphullerene: a new form of two-dimensional carbon	MEIRZADEH Elena
17:45	2978		Deterministic Graphene Folds Through Ultra-Fast Laser Nano-texturing : A new approach to Graphene Origami	JUAREZ-SABORIO Ana Florencia
18:00	2982		Biaxial strain for high-pressure sp ² to sp ³ bound formation in nanocarbons	VIALLA Fabien

Tuesday May 28

H05_Bioapplications of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : TORELLI Marco

09:00	1224	Ultra-high Antibacterial and Antivirus Graphene Quantum Dots/Polyester Fiber Through Large-Scale Industrial Production	LIJUN QU Lijun
09:15	15	3D printing for diamond implant technology	FOX Kate
09:30	1724	Transfer of antioxidant activity from methanolic extract of <i>Dichrostachys glomerata</i> to photoluminescent carbon quantum dots (CQDs)	DJIAZET Stève
09:45	2445	Individualization of carbon nano onions for biomedical applications	LUCHERELLI Matteo Andrea

Tuesday May 28

H06_Advanced Characterizations of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : EWELS Christopher

10:30	407	INV	Synchrotron-based X-ray spectromicroscopy for the characterization of nanocarbons	PETIT Tristan
11:00	2232		Exploring Electric Field-Directed Growth of Single-Wall Carbon Nanotubes: In-situ Observations using Environmental TEM and Field Emission	PIMONOV Vladimir
11:15	1778		Colloidal behavior of hydrogenated milled nanodiamonds in water	GIRARD Hugues
11:30	579		Colloidal nanodiamonds for applications in biological, optical, and marine equipment	WANG Tao
11:45	1465		Size sorting of highly crystalline high-pressure high-temperature nanodiamonds	FINAS Marie

Tuesday May 28
H07_Luminescence properties of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : WRACHTRUP Joerg

13:45	2401	INV	Fluorescent Nanodiamond by Design for Quantum Sensing	TORELLI Marco
14:15	343		Detection and Manipulation of Intracellular Motion at Nanoscale Precision Using Nanodiamond-based Thermometer and Heater	WU Yingke
14:30	1847		NV Centers in nanodiamond as a CL temperature probe	SÁENZ DE SANTA MARÍA MODROÑO Pablo
14:45	2499		Strain-Relaxed Nanocrystalline Diamond Thin Films with Silicon Vacancy Centers Using Femtosecond Laser Irradiation	ONDIC Lukas
15:00	1931		Pushing the Limits of Surface Plasmon-Coupled Directional Emission Platform through Heterometallic-Dielectric, Ag-Au-Nano Carbon Florets for ultra-sensitive detection of emerging organic contaminants in water	THACHARAKKAL Dipin
15:15	640		Photostable Red Emitting Carbon Dots for Solid State Lighting and Random Laser Emission	PRAMANIK Ashim
15:30	2571		Room Temperature Electrochemical Synthesis of Carbon Quantum Dots	DOLANJSKI Mia
15:45	359		Unraveling Eumelanin Radical Formation by Nanodiamond Optical Relaxometry in a Living Cell	LU Qi

Tuesday May 28
HP01_Poster Session

ETOILE - FIRST FLOOR

16:30	02_1067	120	02_1067 Water motion-induced energy conversion by carrier density modulation in 2D nanostructure	CHO Yong Hyun
16:30	03_1279	120	03_1279 Highly enhanced electrochemically driven artificial muscles from biomimetic twisted-nano carbons	PARK Chae-Lin

16:30	04_1301	120	04_1301 Verification of Water Permeability-Dependency in Ionovoltaic Electricity Generation	SEUNGYEON Yu
16:30	05_1369	120	05_1369 Perovskite-decorated carbon nanospheres@BiOBr all-solid-state Z-scheme heterojunctions towards sensitive photoelectrochemical immunosensors of deoxyrinvalenol	MIAO MIAO Chen
16:30	07_156	120	07_156 Melamine-Derived High-Graphite Carbon Hollow Tubular Fe-N/C Catalyzed Alkaline Oxygen Reduction Reaction	GAO Yanfang
16:30	08_1567	120	08_1567 Synthesis of reduced graphene oxide from biomass sugarcane dry leaves by two-stage pyrolysis	HASSAN Jamal
16:30	09_1643	120	09_1643 Generation and validation of DFTB parameters for the atomistic simulation of hydrocarbon systems	LEE Seung Mi
16:30	10_166	120	10_166 Biodistribution and Transpiration of Carbon Dots in Celery: Insights into Uptake and Accumulation Mechanisms	GARCIA Sheena Anne Henson
16:30	11_1716	120	11_1716 Lithium-ion battery made of carbon nanowalls using carbon nanofibers with flexible properties.	YOO Seungcheol
16:30	12_1738	120	12_1738 Hydrogen gas sensor using unidirectionally aligned multi-walled carbon nanotubes	KIM Chang-Kyu
16:30	13_1753	120	13_1753 Synthesis and electrocatalytic activity of transition metal electrocatalysts for oxygen reduction reaction derived from porphyrins and their wastes	GIULINI Nicolò
16:30	14_1868	120	14_1868 CoFe and CoNi alloys embedded in N-doped carbon composite-based electrochemical sensor for monitoring of photographic developing agents	ZHANG Yuanyuan
16:30	15_1895	120	15_1895 Electrodeposited with NiPt nanoalloy on laser-engraved graphene for non-enzymatic sensing of glucose	ZHANG Yuanyuan
16:30	16_1919	120	16_1919 Photothermal modulating of ion-transport channels for solid-state, non-Faradic energy storage devices operable at sub-ambient temperatures	VILLAN Mohammed Aslam
16:30	17_1920	120	17_1920 NV Centers in nanodiamond as a CL temperature probe	SÁENZ DE SANTA MARÍA MODROÑO Pablo
16:30	18_198	120	18_198 Nitrogen-containing derived carbon from tannic acid etched ZIF-8 as electrode material for supercapacitors	LIU Juyin

16:30	19_204	120	19_204 Study on the synthesis of oxygen reduction catalyst derived from polyimide covalent organic framework and its performance	ZHAO Xiaoqi
16:30	20_2052	120	20_2052 Development of Double Layer Targets with Ultra Low Density Carbon for Laser Plasma Interaction Optimization	CRACIUN Valentin
16:30	21_220	120	21_220 Advancing Hydrogen Peroxide Sensing with Nitrogen-Doped Carbon Nanowalls	YERLANULY YerassyI
16:30	22_2295	120	22_2295 Design and Applications of Diamond Composites	YANG Nianjun
16:30	23_2420	120	23_2420 MgCaSr-MOFs and carbon dots functionalized injectable hydrogels for photothermal killing tumor and repairing neoplastic bone defects	LI Chunya
16:30	24_2458	120	24_2458 Nanostructured Polyaniline (PANI) Properties for Energy Storage Application	DJELAMDA Sara
16:30	25_2532	120	25_2532 Ball Milling Optimization for the Preparation of High-Density Polyethylene Graphene Nanoplatelets Composites	VOURLIAS George
16:30	26_2565	120	26_2565 Dispersion of Single-walled Carbon Nanotubes with Metal-based Medium for Multifunctional Electrodes	KIM Mi-Jeong
16:30	27_2588	120	27_2588 Enhancing supercapacitive performance of activated candle soot-derived carbon electrode with aqueous and non-aqueous electrolytes.	KEERTHANA APPARLA Naga
16:30	28_2627	120	28_2627 2D MOF coated Carbon Nanofiber Composite Membrane for Efficient Removal of Microplastics	JAIN Karishma
16:30	29_2644	120	29_2644 Magnetic Bamboo Activated Carbon derived from waste Bamboo for the Effective Remediation of fluoride (F-) ions from Ground water	BAGBI Yana
16:30	30_2698	120	30_2698 In situ annealing to understand the role of adsorbates on H-MND conductivity using surface characterization	NJEL Christian
16:30	31_2710	120	31_2710 Large Area CVD Growth of Bilayer Graphdiyne for Flexible Piezoresistive Applications	MUKKATH JOSEPH Josline
16:30	33_2839	120	33_2839 New method for synthesis of carbon nanotubes	ABDISAIDOV Ilyos
16:30	34_2858	120	34_2858 A continuous approach to developing new pathways for the synthesis of carbon-derived materials	KELLICI Suela

16:30	36_2879	120	36_2879 Effect of Plasma Power and Duration on the plasma induced incorporation of N in nanostructured carbon films	TRAN Trung Hieu
16:30	37_2968	120	37_2968 Photophysics insights and reactivity of Carbon Nanoparticles combined with Iron	MARTINEZ HAYA Rebeca
16:30	38_314	120	38_314 Formation and stability of the conducting cluster in the composite filaments based on polylactide and carbon nanofibers	MALAFEEV Konstantin
16:30	39_333	120	39_333 Dual emission of o-phenylenediamine based carbon dots for anti-counterfeiting application	HONG Woo Tae
16:30	40_353	120	40_353 Efficient g-C ₃ N ₄ / CuO/Al ₂ O ₃ Heterojunction Photocatalyst for Hydrogen Evolution	SAMUEI Sara
16:30	41_38	120	41_38 X-ray Micro-Computed Tomography (XMCT) of Topological Carbon Foams and Graphene Aerogels for the Energy-Water-Sensing Nexus Applications	GUPTA Sanju
16:30	42_416	120	42_416 Biochar from waste mango and pineapple peel as a supporter for phase change material in thermal storage application.	RATTANAPHANEE Panarat
16:30	43_494	120	43_494 Fabrication of heterostructured Co/N-doped porous carbon for enhanced electrochemical detection of rutin	YANG Juan
16:30	44_880	120	44_880 Diamond-Titanium Composites for Sensing Technologies	FOX Kate

Wednesday May 29
H08_ Composites and Fibers

LONDRES 2 - GROUND FLOOR

Chairperson(s) : MIYAKE Takeo

08:45	908	INV	Assembly of high-performance carbon nanotube films and fibers	LIU Chang
09:15	2324		Out-of-box strategy to Synthesize Carbon nanofoam and composites using Pulsed Laser Deposition in Single Production Run	GHOSH Subrata
09:30	1241		Chemical Design of Efficient Photoelectrodes by Heterogeneous Nucleation of Carbon Dots in Mesoporous Ordered Titania Films	MALFATTI Luca
09:45	2459		Electrochemical Investigation of PANI/ MWNTs and PANI/N-MWNTs Produced by In-Situ Polymerization	DJELAMDA Sara
10:00	1718		Electrospun polyacrylonitrile (PAN) derived one dimensional carbon nanofibers for their use in Na-ion batteries	ANSHU Satvik

Wednesday May 29
H09_ Photo(electro)catalysis and Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : YANG Nianjun

10:45	1655	INV	Electron emission from single-crystal and nano-diamond in water	HAMERS Robert
11:15	1346		Diamond nanomaterials as electron source for photo(electro)catalytic reactions	KRUEGER Anke
11:30	838		Nanodiamonds: an alternative for photocatalysis under solar light?	ARNAULT Jean-Charles
11:45	46		Nanoscale redox mapping at the 2D Material-liquid interface by AFM-SECM hybrid system	HEYUN Du
12:00	263		Deposition of nanostructured transition metal carbides on graphene nanowalls supports and characterization for electrocatalytic applications.	CHAITOGLU Stefanos

Wednesday May 29
H10_Nanocarbons for Batteries

LONDRES 2 - GROUND FLOOR

Chairperson(s) : KUMATANI Akichika

13:45	1240	INV	Advanced Functions Derived from Unique Porous Molecules: Anode Materials of Lithium Ion Batteries	SATO Sota
14:15	92		Directly Carbon Fuel Cell - Design & Constructure	GAO Yanfang
14:30	1243		Scanning electrochemical cell microscopic techniques for low-dimensional energy materials	KUMATANI Akichika
14:45	654		Effect of the number of graphene layers in rGOCNT current collectors for Anode-free Li metal batteries	LEE Seungho
15:00	751		Regulating Li-ion flux via Holey Graphene as Li-ion redistributor for High-rate Li metal batteries	SUBI Yang
15:15	2859		A unique approach to control nitrogen doping in microporous carbon at ambient conditions for a stable reversible room-temperature sodium-sulfur battery	SUNGJEMMENLA Sungjemmenla

Thursday May 30

H11_Nanocarbons for Devices and Sensors

LONDRES 2 - GROUND FLOOR

Chairperson(s) : ROY Soumyabrata

09:00	1082		Development of graphene-based nanocomposites for the detection of sulfur-containing pollutants: physical vs chemical metal NPs decoration	NDIAYE Amadou
09:15	248		Printed Ambipolar Carbon Nanotube/Organic Semiconductor Heterojunction Thin-Film Transistors via One-Step Spin-Coating: Towards Flexible Complimentary Circuits	RAINER Christian
09:30	2029		Electrochemical Sensing: Unveiling the Potential of Boron-Doped Nanodiamonds and Boron Doped Carbon Nanowalls (B:CNWs/ BDD) Composites for Enhanced Detection of Highly Toxic Pesticide Paraquat	SAIN Sourav
09:45	3001		Direct capturing of VOCs and their photo-thermal release by Hard nanocarbons monolith	YADAV Subham

Thursday May 30

H12_Theoretical studies of Nanocarbons

LONDRES 2 - GROUND FLOOR

Chairperson(s) : HAMERS Robert

10:30	1508	INV	Bottom-up design and realisation of stable fullerene spin systems	EWELS Christopher
11:00	557		Modeling the impact of strain on color centers in diamond: a first principles study of the GeV-center	VANPOUCKE Danny
11:15	618		Firm tightening of nanotube bundles by using the double helix network of polymer trefoil knot: A molecular dynamics study	GOH Byeonghwa
11:45	2321		Connecting structure and optical properties of N-doped Carbon Dots: Experimental characterization and computational modelling.	OLLA Chiara
12:00	2938		Carbon nanodots: modeling of zero-dimensional carbon nanomaterials to explain optical properties	CARBONARO Carlo Maria

Thursday May 30
H13_Nanocarbons for Energy Storage

LONDRES 2 - GROUND FLOOR

Chairperson(s) : SATO Sota

13:45	85	INV	3D Printed Carbon for Energy Storage and Conversion	GUAN Cao
14:15	1356		Effect of carbon nanomaterials as conductive additives in EDLCs	PAVLENKO Vladimir
14:30	1624		Synergistic Enhancement of Planar Micro-Supercapacitors through the Combined Impact of Activated Carbon and PEDOT:PSS in Hybrid Electrodes	FAN Yujia
14:45	2207		Single-Step Preparation of Electrode for Electric Double Layer Capacitors via Microwave Plasma-Enhanced Chemical Vapor Deposition	TUNG Jui-Yu
15:00	696	INV	Mixing for Charge Storage in Nano-Carbon Materials	LI Feng
15:30	INT2		Concluding remarks	ORGANIZERS