Nanochemistry, Nanoparticles, Nanocatalysis

Tuesday March 18th

3:30 P.M. - 6:45 P.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

HOUR	NAME	TITLE
15:15	**Christophe PETIT MONARIS - Sorbonne. Univ**	**Oleylamine and low valency organic precursor : a facile route to metallic and multicomponent N**
15:45	Fadoua SALLEM GET - CNRS	Controlled synthesis of copper-based nanoparticles
16:00	Jean IRLE BELMONT LCC - Univ. Toulouse 3	Towards predictive copper nanoparticles of mastered size and shape
16:15	Guillaume BONIFAS LPCNO - INSA Toulouse	Unraveling the Facet-Dependent Surface Chemistry of Indium Phosphide Nanocrystals
17:00	Marina DESCOUBES LCT - Sorbonne Univ.	Multi-scale modeling of the dissolution/growth dynamics of metallic copper clusters during synthesis or catalysis processes
17:15	Abdennour BENABBAS IC2MP - CNRS	Novel Green Method for the Preparation of Supported Sub-10 nm Non-Noble Metal (Cu, Sn and Ga) Nanoparticles
17:30	David RIASSETTO LMGP - Inst Polytechnique de Grenoble	Growth Mechanism of Ultra-thin, Long and Flexible CuO2 Nanowires for Photocatalytic Membranes Applications
17:45	Lamyae BENHAMOU GEMTEX - ENSAIT	Morphological Control of 3D Hierarchical ZnO Microspheres via Citrate-Assisted Hydrothermal Synthesis
18:00	Michel FERON Institut de Chimie de Toulouse - Univ. Toulouse 3	Following zinc oxide nanoparticles formation
18:15	Brandon AZEREDO LPCNO - INSA Toulouse	Topochemical reactions of P with Co nanorods

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Short Biography

Born in 1962 Christophe Petit is full professor at Sorbonne University and former director of the laboratory MONARIS (2014-2024). He was co-responsible (2011-2017) of the Nanochemistry thematic axe of the Labex MiChem then deputy director of the labex MICHEM (2017-2022). He was deputy director of « Initiative pour les Sciences et Ingénierie Moléculaires » (2020-2024) and co-responsible (2014-2016) of the Nanochemistry axe of the network C'Nano from the "Region IdF" (Former DIM NANO-K). He is actually in the board of the IRN 'nanoalloys' (https://nanoalloys-irn.cnrs.fr/).
Author or co-author of 85 publications in peer-reviewed journals and 8 book chapters, his research is now mainly
devoted in the development of new sustainable synthesis to control the shape, size and structure of (bi) metallic
nanocrystals and their application in nano-electronic but also in catalysis. Besides the empirical process, the aim is to understand the nucleation and growth mechanism to establish rational synthesis of metallic and multi metallic NCs and to develop their applications

Title of Oral Presentation

Oleylamine and low valency organic precursor : a facile route to metallic and multicomponent N

Keywords (5 words max)

(bi) metallic nanocrystals, nucleation and growth , nanochemistry

Abstract of Oral Presentation

Metallic nanoparticles will initiate important development in nanotechnologies due to their specific chemical and physical properties (i.e. in catalysis, magnetism, optics, etc..) and new development in sustainable energy. It is well known that these properties are mainly controlled by the fine tuning of structural parameters such as the size, shape, crystallinity and composition. However, the understanding of the mechanical steps leading to the shape control of these objects still remains challenging. Recently our group developed a one-pot synthesis of metallic or bimetallic spherical NPs with only two reagents: MCl(PPh3)3 and Oleylamine (M= Co or Ni).1-3 This method showed many advantages like the reproducibility, the low size dispersity and well crystalline NPs.2-3 This synthesis allows also the formation of transition metal phosphorus (TMP) nanorods starting from pure metallic spherical NPs. Herein, we propose a mechanism for the morphological transition from spherical cobalt NPs to Co2P NRs over time in a mixture of [CoCl(PPh3)3] and oleylamine (OAm) heated at 190°C.4 The crucial role of oleylamine in the transition was also confirmed by X-ray photoelectron spectroscopy (XPS) but it discloses also the significant involvement of the organo-phosphorus ligand of the Co(I) precursor during the spheres to rod transition yielding to Co2P nanorods formation. Interestingly this model could be extended to multicomponents NPs as CoNiP. Lastly, the novel synthesis, which produces Co2P nanorods at a relatively low temperature (~190 °C), compared to the standard process (~330 °C), is a notable finding, given the promising applications of this material, particularly in electrocatalytic water splitting.

Acknowledgement

This work was financially supported by Sorbonne Université, CNRS, the ANR in the framework of the program entitled “Nucleation, growth and reactivity of MEtallic and bimetallic Nanocrystals”under reference ANR- 17-CE09-0037 and LabEx MiChem (“Investissements d’Avenir” program) under reference

References (6 lines max)

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3- A. Moisset, et al. Nanoscale, 2021, 13, 11289–11297.
4- R. Benbalagh, et al. The Journal of Physical Chemistry C, 2024, 128, 3408-3422.

Wednesday March 19th

10:30 A.M. - 12:30 A.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

Chairs:

HOUR	NAME	TITLE
10:30	**Emilie POUGET CBMN - CNRS**	**Design of functional nanostructures via chirality induction**
11:00	Rahul NAG ITODYS - Univ. Paris Cité	Polarization-Sensitive Phototransformation of Chiral Plasmonic Assemblies
11:15	Caroline SALZEMANN MONARIS - Sorbonne Univ.	The intriguing role of L-cysteine on the modulation of chiroplasmonic properties of chiral gold nano-arrows
11:30	Henri LE HOUELLEUR LPEM/ESPCI - PSL	Self-assembly of tartrate ligands on 2D semiconductor nanoplatelets for strong chiro-optical features
11:45	Azadeh EDALAT LCC/CEMES - INSA Toulouse	In situ study of Fe nanoparticles in H2 atmosphere: surface reconstruction and reactivity
12:00	Ritika WADHWA PMC - CNRS	Understanding microstructural evolution in rare earth vanadate nanoparticles upon protected thermal annealing
12:15	Jade RAIMBAULT NIMBE/LIONS - CEA	Dense liquid precursor in mineral crystallization: spinodal morphology and high viscosity evidenced by electron imaging

Emilie POUGET (CNRS – CBMN, Bordeaux)

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Short biography

Emilie Pouget studied the chemistry at the Polytechnic National Institute of Toulouse (INP Toulouse, France) and obtained a Master degree in 2002. In 2006, she obtained a PhD from the University of Rennes for her work on the mineralization of peptidic self-assembled nanotubes. From 2006 to 2008, she went to the Eindhoven University of Technology (Netherlands) to work as a post-doc on biomineralization studies by coupling the cryoTEM tomography and the electron diffraction. She then worked at the Centre de Recherche Paul Pascal in Bordeaux (France) on the mineralization of this biological liquid crystal. Since 2012, she is working as researcher at the CNRS, in the CBMN Institute in Bordeaux, France.

Emilie Pouget's work aims at developing new nanofabrication strategies based on the chirality induction principle in order to control the morphologies from the nanometric scale to the macroscopic level. Such chiral nano-objects are studied for their chiroptical, magnetochiral or catalytic properties.

Design of functional nanostructures via chirality induction.

In the field of functional nano-materials, the chiral structures like helices or twisted ribbons are of great interest because of their specific chemical, optical or mechanical properties. The present work aims at developing new nanofabrication strategies based on the chirality induction principle in order to control the morphologies from the nanometric scale to the macroscopic level. Functional hybrid nano-helices are synthesized by use of organic chiral self-assemblies forming well-defined helix structures as templates.
The mineralization of these self-assemblies allows creating silica nano-helices with controlled morphologies in term of diameter and pitches [1]. A particular focus is given to the length control to create individualized and well-dispersed helices in solution [2], suitable for hierarchical organization from the nano- to the macrometric level.
Such chiral nano-objects are then used as base for the creation of functional nanoobjects. The interaction of such objects with different molecules and nanoparticles induce new chiroptical, magnetochiral or catalytic properties [3, 4, 5].

Keywords

Chirality, Nanohelices, Hierarchical organization, Plasmonic, Magnetism

Acknowledgement

Founding sources: Bordeaux University, CNRS Chimie, ANR (ANR-19-CE09-0018, ANR-23-CE09-0015)

References

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3. Gao et al. ACS Nano 2020, 14(4), 4111–4121
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5. Duroux et al., Nanoscale 2023, 15, 12095-12104

Wednesday March 19th

4:30 P.M. - 6:30 P.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

Chairs:

HOUR	NAME	TITLE
16:30	**Mona TREGUER-DELAPIERRE ICMCB - Univ. Bordeaux**	**Matter and materials made from metallic nanoparticles**
17:00	Aurore LARQUEY ICGM - CNRS	Heater@luminescent nanoplatforms based on Prussian blue core@silica shell nanoparticles for photothermia and thermometry
17:15	Jens KRARUP NIMBE/LIONS - CEA	High-throughput synthesis and characterization of magnetic iron oxides
17:30	Farah ABDEL-SATER ICGM - CNRS	Iron oxide multifunctional nanoplatforms: towards temperature control in photothermia and magnetothermia
17:45	Naoures HMILI LRS - Sorbonne Univ	Mixed manganese and zinc ferrite magnetic nanoparticles for magnetocuring of adhesives
18:00	Thomas NAILLON LCMCP - Sorbonne Univ.	Synthesis of luminescent oxides nanoparticles for nanothermometry measurements in magneto-induced processes
18:15	Amine KHITOUS ICB - CNRS	Ultrafine TiO_2-Coated Gold Nanoparticles: A Robust Platform for Raman Thermometry

Mona TREGUER-DELAPIERRE (Univ. Bordeaux – ICMCB, Bordeaux)

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Short biography

Pr Mona Tréguer-Delapierre, a Professor at the Institute of Chemistry of Condensed Matter (ICMCB) near Bordeaux, focuses on nanoparticles synthesis and assembly into 2D and 3D materials. She obtained her PhD in Physical Chemistry from the University of Orsay and was a post-doctoral fellow at the Radiation Laboratory in USA. She works in several metallic materials of interest in optics and energy. Currently, with her colleagues, she is exploring how metallic nanostructures can be exploited for mastering the fabrication of next-generation materials for optoelectronics and to create innovative visual appearance designs.

Matter and materials made from metallic nanoparticles

Colloidal metallic nanoparticles with well-controlled shapes and surface properties exhibit unusual physico-chemical characteristics. They are of significant interest for advancing applications in a range of exciting research fields : cloacking, imaging, optical communication. Mastering their fabrication enables to make useful novel materials and to gain deeper understanding of the optics of materials at the nanoscale. In this talk, I will show the recent advancements in the colloidal synthesis of metallic nanoparticles for the design of optoelectronic materials and the creation of surfaces with innovative visual appearances.

Keywords

Colloidal synthesis, (bi-)metal, plasmonic, anisotropy

Acknowledgement

French National Research Agency (ANR (ANR-22-PETA-0011), ANR 19CE09-0014) , GPR LIGHT Idex University of Bordeaux, Graduate program ‘EUR Light S&T’)

References

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A.Agreda, T.Wu, A.Hereu, M.Tréguer-Delapierre, G.Drisko, K.Vynck, P.Lalnne, ACS Nano, 17, 6362, 2023

Thursday March 20th

10:30 A.M. - 12:30 A.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

Chairs:

HOUR	NAME	TITLE
10:30	**Damien VOIRY IEM - CNRS**	**Engineering Low-Dimensional Materials for Electrocatalytic Conversion Reactions and Nanofluidics**
11:00	Tatiana STRAISTARI LCC - CNRS	Nanoscale NiCu electrocatalyst for the hydrogen evolution reaction
11:15	Seema SHAFIQ LCC - CNRS	Interfacial ionic liquid based nanocatalysts for low temperature CO2 reduction
11:30	Noa DE CRISTOFARO LCMCP - Stellantis Auto	High Entropy Alloys: from new syntheses to energy conversion
11:45	Felipe QUIROGA SUAVITA LPCNO - INSA Toulouse	Icosahedra like CoPd bimetallic nanoparticles for magnetically induced aromatic ketone hydrodeoxygenation
12:00	Gizem KARACAOGLAN ICMUB _ UBFC	Innovative Organometallic Nanocatalysts for the delivery of H2 from a Safe Solid Storage Source
12:15	Alexis AUSSONNE LCC - CNRS	Colloidal MoS2 nanoparticles by organometallic synthesis as improved catalyst

Damien VOIRY (CNRS – IEM, Montpellier)

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Short biography

Damien VOIRY graduated from the National School of Chemistry and Physics of Bordeaux (ENSCPB) and obtained his thesis at the Paul Pascal Research Center (CRPP) of the University of Bordeaux in 2010. From 2011 to 2016, Damien was a postdoctoral associate in the group of Professor Manish Chhowalla from Rutgers University in the United States. Since Feb. 2016, he is a CNRS staff scientist at the Institut Européen des Membranes de Montpellier. His current research aims to explore the use of low dimensional materials for the fabrication multifunctional membranes for separation application as well as energy application. In 2018, he was awarded an ERC starting grant to investigate the electrocatalytic reduction of CO2 from 2D materials. Damien Voiry has received several national and international awards including the CNRS Bronze Medal, the SCF Young Researcher awards and the 2024 Young Scientist Sustainable Development Goals Award. He was nominated at the Young Academy of Europe in 2020.

Engineering Low-Dimensional Materials for Electrocatalytic Conversion Reactions and Nanofluidics

The dual challenges of climate change and population growth have placed immense pressure on global water resources and carbon management systems. To address these issues, innovative materials and technologies are essential. Nanomaterials, particularly two-dimensional (2D) materials, with their atomic-scale thickness, tunable structures, and unique properties, offer transformative solutions for sustainable water purification and CO2 utilization[1]. In water purification, 2D materials such as graphene and MoS_2 nanosheets are redefining the design of advanced membranes. Their exceptional selectivity and permeability provide the potential to significantly reduce the energy footprint of water recovery and desalination processes. In particular, nanolaminated membranes constructed from re-stacked 2D nanosheets exploit interlayer spacing to achieve precise molecular sieving [2]. My research focuses on how nanosheet surface chemistry and stacking defects influence membrane performance, paving the way for scalable, high-efficiency water treatment systems. In parallel, advances in nanostructured catalysts are opening new pathways for controling electrocatalytic reactions to produce value-added chemicals from CO2, water or nitrate[1]. For instance, our work on self-assembled 2D silver nanoprims has demonstrated near-complete exposure of active edge sites, resulting in remarkable selectivity and activity for CO2-to-CO conversion[3]. Similarly, phase-engineered MoS_2 nanosheets have shown high efficiency in catalytic oxidation and selective nitrate reduction to ammonia. These findings underscore the versatility and precision of low-dimensional materials in addressing key energy and environmental challenges. In this keynote, I will provide a comprehensive overview of the current state of 2D materials in water purification and electrocatalysis. I will also discuss how their rational design and engineering can impact nanofluidics, catalysis, and related fields, offering original and practical solutions to meet global sustainability goals.

Keywords

2D materials, Nanofluidics, Electrocatalysis, Energy conversion

Acknowledgement

European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement no. 804320 /ANR, programme PRC-2D-MEMBA (ANR-21-CE09-0034-01)/

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1. Voiry, D. et al. Low-dimensional catalysts for hydrogen evolution and CO2 reduction, Nature Reviews Chemistry, 2018, 2, 105, [DOI:10.1038/s41570-017-0105]
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3. K. Qi et al., Enhancing the CO2-to-CO Conversion from 2D Silver Nanoprisms via Superstructure Assembly. ACS Nano, 2021, 15, 4, 7682–7693 [DOI: 10.1021/acsnano.1c01281]

Thursday March 20th

2:00 P.M. - 4:30 P.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

Chairs:

HOUR	NAME	TITLE
14:00	**Benjamin ABECASSIS** **Lab. de Chimie ENS - CNRS**	**Synthesis, twisting and self-assembly of semiconducting colloidal nanoplatelets**
14:30	Gregoire HERZOG LCPME - CNRS	Au nanoparticle assemblies at polarized liquid-liquid interfaces for SERS applications
14:45	Florent CARN MSC - Univ. Paris Cité	Towards a new family of ionic colloidal crystals composed of long-chain polyelectrolytes and small spherical nanoparticles.
15:00	Matias FELDMAN INSP - Sorbonne Univ.	Nanoscale control of heat flux in self-assembled ordered nanocrystal solids
15:15	Jisoo OH LPEM - ESPCI	Understanding the Growth Kinetics of Plasmonic CsxWO3-d Nanocrystals for Shape Control and Polarized LSPR
15:30	Miguel COMESANA-HERMO ITODYS - CNRS	Faceted 3D Supercrystals for Plasmonic Photocatalysis: Design, Reactivity and Operando Studies
15:45	Charles VERNIER CINaM - CNRS	Influence of crystalline structure on the acoustic vibrations of elongated nano-objects
16:00	Sajana SEMI ICB - CNRS	Raman Scattering study of Ligand Exchange Effects on the CdS Nanoplatelets
16:15	Safa KHADDAD ICMCB - Aquitaine Science Transfert	Redox reaction between a silicide and coordination complexes for size-tunable silicon particles

Benjamin ABECASSIS (CNRS - Lab. de Chimie ENS, Lyon)

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Short biography

I am a physical chemist working at the Chemistry Lab of the École Normale Supérieure de Lyon. My research lies at the interface between materials science, soft matter and nanotechnology.
My main current interest is ultrathin 2D colloidal nanoparticles: their synthesis, surface chemistry and conformation. I also study the self-assembly of nanocrystals from the perspective of the emergence of collective properties. This implies understanding colloidal forces between particles at the nanoscale. I am also interested in probing the formation mechanism of nanoparticles using in situ synchrotron-based X-ray techniques. I have expertise in Small Angle X-ray Scattering.
I have a PhD (2006) from École Polytechnique and i hold the "habilitation à diriger les recherches" since 2016.

Synthesis, twisting and self-assembly of semiconducting colloidal nanoplatelets

Colloidal nanoplatelets (NPL) are 2D ultrathin (1nm) crystalline nanoparticles coated with a monolayer of surfactants1. Semiconducting NPLs display outstanding optical properties due to their thickness being controlled at the atomic level. I will show that NPLs share many features with soft matter systems. Due to their very small thickness, they can deform under surface stress induced by ligand adsorption to yield shapes ranging from helicoids, helical ribbons, or tubes typically observed in (chiral) surfactant self-assembly. 2 We will argue that NPLs belong to the broad class of geometrically frustrated assemblies and can be very well described in the framework of incompatible elasticity of thin sheets. In some conditions, NPLs assemble face-to-face into micron-long threads which share common features with living polymers3. Long-range FRET exchange occurs between NPLs within these assemblies.4 We also observed twisted chiral threads with defects resembling 1D twist solitons, which have already been observed in various macromolecules.5

Keywords

nanoplatelets, quantum dots, self-assembly, small angle scattering, twisting

Acknowledgement

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement 865995 - SENECA)

References

(1) Guillemeney, L.; Lermusiaux, L.; Landaburu, G.; Wagnon, B.; Abécassis, B. Commun Chem 2022.
(2) Monego, D.; Dutta, S.; Widmer-Cooper, A.; Abécassis, B., in preparation, 2023.
(3) Jana, S.; Davidson, P.; Abécassis, B. Angewandte Chemie International Edition 2016,
(4) Liu, J.; Guillemeney, L.; Abécassis, B.; Coolen, L. Nano Lett. 2020
(5) Jana, S.; Frutos, M. de; Davidson, P.; Abécassis, B.. Science Advances 2017

Friday March 21th

10:30 A.M. - 12:30 A.M.

AMPHITHEATRE GASTON BERGER

Program of the session :

Chairs:

HOUR	NAME	TITLE
10:30	**Damien BOYER** **L2n - UTT**	**Nanosized inorganic and hybrid phosphors for optical applications**
11:00	Leandro SACCO Vs Particle	Automated print technology based on spark ablation for deposition of nanoparticles and nanoporous layers
11:15	Melik MAKSEM LPCNO - INSA TOULOUSE	Integration of soft magnetic materials for RF applications
11:30	Ester BUTERA MAcSE Univ-Rennes	Photochemical synthesis of emissive and photothermal gold-nanoclusters: effect of electron-rich ligand on optical properties.
11:45	Arthur REYMOND L2CM - Univ. Lorraine	Impact of Nanoparticle Shape and Coating Thickness on the Plasmonic Behavior of Au@MnO2.
12:00	Clémence CHINAUD-CHAIX ICMCB - CNRS	Tunable optical properties of silica beads via optimal sequestration of lanthanide ions within it
12:15	Joana VAZ RAMOS ICPEES - CNRS	Magnetic graphene/iron oxide nano-adsorbents for the environmental depollution of polycyclic aromatic hydrocarbons and other relevant pollutants

Damien BOYER (Sigma Clermont – ICCF, Clermont-Ferrand)

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Short biography

Damien BOYER earned his PhD in "Chemistry of Materials" from Blaise Pascal University, Clermont-Ferrand, in 2000, focusing on the development of sol-gel luminescent materials for optical applications. Following his doctorate, he spent two years as a research associate at the Materials Science Center of the University of Manchester. In 2002, he joined the École Nationale Supérieure de Chimie de Clermont-Ferrand (ENSCCF), now SIGMA Clermont, as an associate professor and obtained his Habilitation in 2009. Over the course of his career, he has supervised or co-supervised 15 PhD theses. His research topics are mainly dedicated to the synthesis of size-controlled inorganic or hybrid phosphors through various materials synthesis processes for optical applications (96 Publications, and 5 patent families). His current research interests include the synthesis of red-emitting phosphors for LED-based lighting, green-emitting phosphors for micoLED displays and infrared-emitting phosphors for biological labelling. he has been leading the Luminescent Materials (LM) group at the Institute of Chemistry of Clermont-Ferrand. The group consists of around 20 members, including 8 permanent researchers

Nanosized inorganic and hybrid phosphors for optical applications

Over the past decade, the demand for nanophosphors has surged, driven by the growing need for advanced materials in a variety of applications. Specifically, nanosized phosphors with superior optical properties have garnered significant attention due to their potential in high-performance displays, fluorescent probes for nanomedicine, and even specialized applications like 3D printing using inkjet technologies. Two main strategies for designing these materials can be considered: bottom-up approaches (constructing them from molecules) and top-down methods (reducing bulk materials to the nanoscale). In this talk, I will explore both strategies for synthesizing various types of nanosized phosphors, including inorganic (oxide and fluoride), organic-inorganic hybrids (organic dyes encapsulated in silica nanoparticles), and semiconductor nanocrystals (Quantum Dots or QDs). I will focus specifically on the preparation of $Y_3Al_5O_{12}:Ce^{3+}$ [1] and $NaYF_4:Yb^{3+},Tm^{3+}$ nanoparticles [2], and discuss their applications: the former as a yellow-emitting phosphor for LED devices based on microLEDs (µLEDs), and the latter as an up-converting phosphor for infrared medical imaging. Additionally, I will present the development of luminescent hybrid nanoparticles, where fluorescein is encapsulated within a silica matrix using the reverse microemulsion method [3]. Lastly, I will discuss a family of cadmium-free quantum dots, consisting of InP cores coated with a ZnS shell. These QDs are particularly promising due to their remarkable size-dependent optical properties, which make them ideal candidates for a variety of applications [4,5].

Keywords

Nanoparticles ; Phosphors ; microLED/LED ; Display ; up-conversion

References

[1] WO2018002556A1, "Method for producing photoluminescent particles", A. Aboulaich (Aledia), G. Chadeyron (ICCF) et R. Mahiou (ICCF) [2] A. Cordonnier et al., Journal of Materials Chemistry B, 9 (2021) 7423-7434. 10.1039/d1tb00777g [3] R. Boonsin et al., Journal of Materials Chemistry C, 4 (2016) 6562-6569.10.1039/C6TC01039C [4] R. Valleix et al., Advanced Materials, (2021) 2103411. 10.1002/adma.202103411 [5] R. Valleix et al., ACS Applied Nano Materials, 4 (2021) 11105-11114.10.1021/acsanm.1c02577

Poster Session

NANOCHEMISTRY & NANOPARTICLES/NANOBIOSCIENCES & NANOMEDECINE /NANOMATERIALS FOR ENERGY/ SUSTAINABILITY AND ECO DESIGN OF NANOMATERIALS

N° POSTER	TITLE	NOM	Prénom
31	Plasmon-induced thermo-polymerization of PETA in presence of various thermal initiators	BASTIDE	Mathieu
32	Green synthesis of curcumin based nanoparticle	BASU	Surita
33	Synthesis of Polyvinylpyrrolidone nanocomposite with palygorskite for application in water-based drilling fluids	DALMONEKI	Anna Clara
34	Carbon supported metal oxides nanoparticles and their applications in biomass valorization	DJELLALI	Ali
35	Synthesis of Polyacrylamide/Palygorskite Nanocomposites for Application in Water-Based Drilling Fluids	GOMES	Ana Beatriz
36	Re(CO)-based silica-nanoparticles as multimodal probes for bio-imaging	KAUFFELD	Willem
37	Chiral CdSe/CdS Nanonails	KUZNETSOVA	Vera
38	Towards large-scale production of Cobalt nanorods	LISOIR	Emma
39	Synthesis and Evaluation of PAMAM G0.5 Dendrimer as a Swelling Inhibitor Additive for Clays in Water-Based Drilling Fluids	LOPES/SPINELLI	Grazielle/Luciana
40	Plasmonic nanoclusters synthesized by a multi-step colloidal approach	ROMANUS	Martin
41	Influence of CuInS2 crystalline structure on the synthesis of CuIn1-xFexS2 quantum dot by cation exchange	ROUX-BYL	Céline
42	Chirality in Zinc Oxide nanoparticle synthesis	SARTOR	Valerie
43	Application and evaluation of core-shell nanocomposite using silica nanoparticles and AM/AMPS/DMDAAC/AAC tetrapolymer	SPINELLI	Luciana
44	Design of efficient nanocatalysts for H2 release from boranes and silanes	THIBAULT	Maxime
45	Influence of crystalline structure on the acoustic vibrations of elongated nano-objects	VERNIER	Charles
46	Chemistry and biological effects of germanium oxide nanoparticles	VIKRAMAN	Haribaskar
47	From laser-synthesized nanoparticles to innovative medical devices	AL KATTAN	Ahmed
48	Ultra-small Superparamagnetic Iron Oxide Coated Phosphonate-based Ligand for MRI Application	CHE DJI	Lyns Verel
49	Magnetic hyperthermia tumor ablation and tumor microenvironment modulation monitored by optical imaging	COSTE	Henri
50	Synthesis of iron oxide nanoparticles and magnetic properties tuning by temperature cycling: towards fine control of crystal phase and size distribution	HUEZ	Cecile
51	Hybrid plasmon-semiconductor nanoparticles for charge or resonant energy transfer based dynamic phototherapy	JEFFRIES	Beatrice
52	Re(CO)-based silica-nanoparticles as multimodal probes for bio-imaging	KAUFELD	Willem
53	Force nanosensor development for measuring mechanical stress exerted by living cells	LACROIX	Noemie
54	Combination therapy using nanoheaters and CAR-T immunotherapy on 3D tumor models	LEINEBO	Charlotte Amalie
55	Red-blood-cell-membrane-coated polymer micelles/vesicles as biomimetic nanoassemblies for potential photocatalytic cancer therapy under hypoxia	MA	Yandong
56	Vivoptic, a preclinical optical imaging platform for the evaluation of diagnostic and therapeutic strategies	MORNET	Stéphane
57	On the Roles of Polymer Chemistry, Kinetics, and Mixing in the Assembly of Loaded Polymer Nanoparticles	REISCH	Andreas
58	Digital colorimetric biosensing on gold-DNA origami nanostructures	ZHANG	Zixiao
59	Cu Isotopic Fractionation Following Foliar uptake	CALAS	Aude
60	New process "Multi-Dip Coating" applied for biological statistical analysis of Antimicrobial Surfaces	CHARLIAC	Jérôme
61	One step synthesis using laser pyrolysis of nanostructured carbides molybdenum catalysts for hydrogen production	RIO	Simon
62	Study of the reactivity of Fe(0) nanoparticles towards ammonia	ZAMBLE	Christian Irie
63	Chemical Passivation of GaN Nanowires for the Development of Innovative Photocatalysts	ZORAI	Amel