



Multi-Functional Nano-Carbon Composite Materials Network

COST Action CA15107 meeting

PROGRAMME AND ABSTRACTS

March 8 – 9, 2018

Vilnius, Lithuania



Sponsors



Organizing committee

J. Macutkevic
M. Ivanov
R. Grigalaitis
J. Banys
S. Malik

Programme

Thursday, March 8th

08:30	Registration
09:00-09:15	Welcome
09:15-10:30	<p>FLASH Presentations (9 x 6 min talks) – Session Chair Fil Ruddock</p> <p>Jadranka Blazevska Gilev <i>Thin deposited graphene based nanocomposites films obtained by laser ablation</i></p> <p>A.Sezai Sarac <i>Stabilization and carbonization of copolymers of acrylonitrile nanofibers: Carbon nanofiber precursor</i></p> <p>Radmila Tomovska <i>Synthesis of graphene/polymer 3D porous composites for CO2 capture</i></p> <p>Maria Rybarczyk <i>Curved graphene layers obtained from biopolymer precursor</i></p> <p>Liutauras Marcinauskas <i>Deposition of amorphous carbon films at atmospheric pressure</i></p> <p>Michela Alfe <i>Graphene-like (GL) layers as building blocks for advanced materials and composites development</i></p> <p>Maria Kandyla <i>Surface-enhanced Raman spectroscopy of graphene on non-planar plasmonic nanostructures</i></p> <p>Branislav Stanković <i>Application of logistic function to describe kinetics of non-isothermal dehydroxylation of fullerol</i></p> <p>Vilius Dovydaitis <i>Deposition of oxygen doped amorphous carbon films by magnetron sputtering</i></p>
10:30-11:00	Coffee Break
11:00-12:15	<p>FLASH Presentations (8 x 6 min talks) – Session Chair Radmila Tomovska</p> <p>Alexander Talyzin <i>Molecular pillar approach to grow vertical covalent organic framework nanosheets on graphene: new hybrid materials for energy storage</i></p> <p>Marta d'Amora <i>Toxicity comparison of different carbon-based nanomaterials in zebrafish</i></p> <p>Silvia Giordani <i>Carbon nano-onions for diagnostics</i></p> <p>Valentina Gargiulo <i>Functional biocompatible interfaces for bioelectronics applications by the integration of eumelanin and graphene-like layers</i></p> <p>Uwe Popp <i>3D Printed Carbon Fibre Reinforced PEEK: focus on Medical Applications</i></p> <p>Hatem Akbulut <i>Nanocarbon Based Template Synthesis Single Crystalline LiMn2O4 Spinel</i></p> <p>Mehmet Oguz Guler <i>Innovative Graphene Based MnO2 / LTO Fullcells for Li-Ion Batteries</i></p>

	<p>Malamatenia Koklioti <i>Photoioninduced catalytic properties of metal nanoclusters/graphene ensembles</i></p>
12:15-13:30	<p style="text-align: center;">Lunch Break Opportunity to Network and start Discussions at the Posters</p>
13:30-14:45	<p>FLASH Presentations (8 x 6 min talks) – Session Chair Silvia Giordani</p> <p>Artyom Plyushch <i>Highly effective radar absorbing materials based on SiC whiskers</i></p> <p>Jelena Jovanovic <i>Kinetics of fullerene polyhydroxylation</i></p> <p>Anastasios Stergiou <i>Functionalization and Processing of Graphitic Low-Dimensional Functional Nanocarbons</i></p> <p>Ivan Radovic <i>Theoretical modeling of experimental EELS data for monolayer graphene supported by different metal substrates</i></p> <p>Daphne Davelou <i>Electronic properties of transition metal dichalcogenide nanoribbons</i></p> <p>Naum Naveh <i>Development of nano-structured interphases in carbon-epoxy composites</i></p> <p>Silvia Marchesan <i>Green, waste-free functionalization of CNT fibers for supercapacitors and use in water</i></p> <p>Polina Kuzhir <i>Graphene based metasurface for THz passive components</i></p>
14:45-15:00	<p style="text-align: center;">Breathing break</p>
15:00-16:00	<p>FLASH Presentations (7 x 6 min talks) – Session Chair Maria Candyla</p> <p>Arkady Krasheninnikov <i>Graphene-Transition Metal Dichalcogenide Heterostructures as Two-Dimensional Nano-Carbon Composite Materials</i></p> <p>Galina Dovbeshko <i>Graphene-type composite materials as SEIRA and SERS platforms</i></p> <p>Serkan Unal <i>Hybrid Organic-Inorganic Nanomaterials: Preparation of Carbon Nanofiber Supported Pt Nanoparticles</i></p> <p>Miroslav Huskić <i>The influence of graphene oxide particle size on the properties of epoxy resin nanocomposites</i></p> <p>Raul Arenal <i>Structural and Local Spectroscopic Studies on Hybrid Nanomaterials by Advanced TEM</i></p> <p>Juan C. Fernandez-Toribio <i>Mechanical modelling and characterization of CNT fibres the role of alignment</i></p> <p>Jan Macutkevic <i>Electromagnetic properties of carbon foams</i></p>
16:00-16:30	<p style="text-align: center;">Coffee break</p>

16:30-17:00	FLASH Presentation and Short talk – Session Chair Sharali Malik
	1 x 6 min Dr Susan Anson <i>Opportunities to compliment your research at KMNF</i>
	1 x 20 min Mr. Edward Goldwyn <i>Potential use of Video for MultiComp</i>
17:00 – 18:30	Poster session
19:00-21:30	Conference Dinner

Friday, March 9th

09:30-10:45	MC Meeting	Parallel session:- Other meeting Participants with Mr. Edward Goldwyn.
10:45-11:15	Coffee Break	
11:15-12:30	MC Meeting concluded	
12:30-14:00	Lunch Break	
14:00-15:15	WGs Meetings	
15:15-15:30	Coffee Break	
15:30-16:30	WGs Meetings	
16:30-17:00	Breathing Break	
17:00-18:30	WGs Leaders/Representatives Reporting	

List of poster presentations

1. **Carla Bittencourt**, *Fluorination of Suspended Graphene*
2. **Polona Umek**, *Carbon nano-allotropes based on few layer graphene and fullerene C60: synthesis and characterization*
3. **Aleksandras Iljinas**, *Synthesis of nanostructured amorphous carbon-copper composite films*
4. **Edita Palaimiene**, *Dielectric/electric properties of onion like carbons/epoxy composites*
5. **Matej Micusik**, *Multi-Walled Carbon nanotubes/pollypyrrolle composites with different surfactants*
6. **Irina Kuhne**, *Surface attachment of Mn(III) SCO compound on few-layer graphene*
7. **David Tomecek**, *Photoregenerating thin films of phthalocyanines for NO₂ and explosive taggants detection*
8. **Jan Vlcek**, *Fullerenes in Polymeric Ion Liquid Matrix for Chemical Sensing: Synthesis, Characterization and Sensor Properties*
9. **Darya Meisak**, *Dielectric properties of Fe₂O₃H₂O/epoxy resin composites*
10. **Vytautas Samulionis**, *Efect of WS₂ nanotubes on dielectric and ultrasonic properties of polyurethane based composites*
11. **Martin Vrnata**, *Polymeric ionic liquids as sensitive layers for textile gas sensors*
12. **Samaneh Etemadi**, *Study and synthesis of in-situ doping of GO with nitrogen (GO-N)*
13. **Dejan Kepic**, *Gold nanoparticles/exfoliated graphene hybrid obtained by gamma irradiation*
14. **Tal Ben Shalom**, *Crystalline Nano Cellulose (CNC) and Carbon Nanotubes(CNT) based composites films and coatings*
15. **Dimitrios Periovoliotis**, *Bimetallic Nanoparticles/Sulfur-doped Graphene Electrocatalysts for Oxygen Reduction Reaction*
16. **Amra Bratovic**, *Titanium oxide nanospheres coated with carbon xerogel as efficient photocatalysts for the elimination of drugs*
17. **Justina Gaidukevic**, *Formation of Low-Defect Graphene Coating from Graphene oxide-Dye Nanocomposites by Pulsed Laser Treatment*
18. **Sergejs Gaidukovs**, *Dielectric Properties of EVA/Graphene Layered Composites*
19. **Lisaveta Shashkova**, *Effect of graphene grains size on the electromagnetic response at high frequency range*
20. **Diana Malgorzhata Bobrowska**, *Functionalization of carbon nano-onions (CNOs) with triphenylamine and triphenylphosphine derivatives: synthesis and physicochemical properties*
21. **Fatima Boaunis**, *Diameter controlled growth of SWCNTs using Ru as catalyst precursors coupled with atomic hydrogen treatment*

22. **Fatima Boaunis**, *Graphene nanoplatelets coating for corrosion protection of aluminum substrate*
23. **Joanna Breczko**, *The EC-SPR biosensor based on graphene oxide, silica and gold nanoparticles in NADH determination*
24. **Claudio Larosa**, *The role of MWCNTs and SWCNTs on the crystallization of polycarbonate evaluated by XRD, SEM and spectroscopic absorption*
25. **Masooma Ibrahim**, *Chirality-Specific Growth of SWCNTs*
26. **Muslum Kaplan**, *Improvement of Mechanical Properties of Polyethylene Meltblown Webs*
27. **Zoran Eres**, *Copper substrate contamination with compact SiO₂ thin film deposits due to reactor tube evaporation in graphene CVD synthesis process*
28. **Georgios Tritsaris**, *Perturbation theory for weakly coupled two-dimensional layers*
29. **Ari Rosling**, *New era of biodegradable composites - ABMcomposite*

Theoretical modeling of experimental EELS data for monolayer graphene supported by different metal substrates

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We present a theoretical modeling of the electron energy loss spectroscopy data for monolayer graphene supported by Pt(111), Ru(0001), and Ni(111) substrates. In order to reproduce the experimental loss function, we have used a two-dimensional, two-fluid hydrodynamic model for inter-band transitions of graphene's π and σ electrons and an empirical Drude-Lorentz model in the local approximation for metal substrates. The agreement between the theoretical curves and the experimental data is very good in the cases of graphene supported by Pt and Ru substrates. Conversely, the agreement is less satisfactory for the case of graphene/Ni, presumably due to the strong hybridization between the π states of graphene and the d bands of Ni, which is not accounted for in the model.



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