



GrInShield

TWINNING FOR NEW GRAPHENE-  
BASED COMPOSITES IN  
ELECTROMAGNETIC  
INTERFERENCE SHIELDING

## 4<sup>th</sup> GrInShield Workshop

**Synthesis of carbon-based nanomaterials,  
green approaches in their productions, and  
gamma irradiation as a tool for their modification**

with a focus on various applications and training in the life cycle assessment



Atelier for meetings at Mama Shelter Belgrade,  
KNEZA MIHAILA 54A, Uzun Mirkova 3,  
Belgrade 11000, Serbia

# Agenda



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email: [grinshieldtwinning@gmail.com](mailto:grinshieldtwinning@gmail.com)



July 16th, 2024.

Topic	Time
<b><i>Session 1. Welcome</i></b>	
<b>Opening speech</b>	
<b>Presentation of Department of Radiation Chemistry and Physics 030</b> Dr. Dragana Marinković, head of Lab 030, a participant in the GrInShield project, VINCA, Serbia	9:00-9:20
<b>GrInShield Presentation</b> Dr. Svetlana Jovanović, coordinator of the GrInShield project, VINCA, Serbia	9:20-9:50
<b><i>Session 2. INTRODUCTION to carbon nanomaterials</i></b>	
<b>Carbon-Based Nanomaterials – structure and properties</b> Dr. Dejan Kepić, a WP6 and WP7 leader in the GrInShield project, VINCA, Serbia	10:00-10:20
<b>Classical synthetic approaches to obtaining GO, GQDs and other</b> Dr. Marija Radiočić, GrInShield project participant, VINCA, Serbia	10:20-10:40
<b>Coffee break</b>	10:40-11:10
<b>MicoWave Synthesis of Carbon Quantum Dots</b> Dr. Jovana Prekodravac, a WP3 leader in the GrInShield project, VINCA, Serbia	11:10-11:30
<b><i>Session 3. How to modify the structure of carbon nanomaterials</i></b>	
<b>Synthesis and modification of graphene oxide-based nanocomposites for electrochemical supercapacitors</b> Dr. Zoran Jovanovic, VINCA, Serbia	11:30-12:00
<b>Fullerene as an ideal model for carbon-based nanochemistry</b> Dr. Dragana Milic, Full Professor, Faculty of Chemistry, Department of Organic Chemistry, Belgrade, Serbia	12:00-12:30



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**Gamma irradiation in the modification of carbon-based nanomaterials** 12:30-12:50

PhD student Mila Milenković, a participant in the GrInShield project, VINCA, Serbia

**Lunch** 12:50-14:00

**Nanomechanical and nanoelectrical properties of carbon quantum dots and gamma irradiated carbon nanotubes** 14:00-14:30

Dr. Zoran Marković, a participant in the GrInShield project, VINCA, Serbia

**Measurement of shielding efficiency of different materials- nanoscale approach** 14:30-15:00

Prof. Dr. Kamel Haddadi, leader of the CNRS team in the GrInShield project, CNRS, Lille, France

**Coffee break** 15:00-15:15

**Microwave sensors and systems, and the relevance of graphene in these devices** 15:15-15:45

Dr. Christophe Loyez, CNRS Director of Research - Head of CSAM Research Group, IEMN/IRCICA, Institute of Electronic Microelectronic and Nanotechnology (IEMN), CNRS, and a participant in the GrInShield project, Lille, France

### *Session 4. Practical Application of carbon-based nanomaterials*

**Graphene-based nanomaterial - a new approach in the removal of heavy metals from water** 15:45-16:15

Dr. Malcolm Watson, Associate Professor, Department of Chemistry, Biochemistry and Environmental Protection, University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia



July 17th, 2024.

Topic	Time
<b><i>Session 1. Introduction to life cycle assessment</i></b>	
Prof. Dr. GRUESCU Ion Cosmin, Mechanical Engineering department, The Technical Institute of the University of Lille, Rue Guglielmon Marconi, Cité Scientifique, 59650 Villeneuve d'Ascq, France, France	
<b>Sustainable innovation</b>	<b>9:00-10:30</b>
Coffee break	<b>10:30-10:45</b>
<b>Ecodesign and environmental management of products and processes</b>	<b>10:45-13:15</b>
Lunch	<b>13:15-14:15</b>
<b>Principle and methodology of life cycle assessment</b>	<b>14:15-15:45</b>
Coffee break	<b>15:45-16:00</b>
<b>Case study</b>	<b>17:30</b>
<b>End</b>	



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July 18<sup>th</sup>, 2024.

Topic	Time
<b><i>Session 1. Cytotoxicity of carbon nanomaterials and gamma rays</i></b>	
<b>Cytotoxicity of carbon-based nanomaterials</b> Dr. Marija Mojsin, Associate Research Professor, Laboratory for human molecular genetics, Institute of molecular genetics and genetic engineering (IMGGE), University of Belgrade, Belgrade, Serbia	9:00-9:30
<b>Different assays applied for evaluation of cytotoxicity in vitro research</b> Prof. Dr. Vladimir Jurisic, Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia	9:30-10:00
<b>Chitosan Nanoparticles - Synthesis, Characterization, and Potential as Antibacterial Agents</b> Dr. Danica Zmejkoski, a participant in the GrInShield project, VINCA, Serbia	10:00-10:30
<b>Coffee break</b>	10:30-10:45
<b><i>Session 2. Practical application of carbon nanomaterials</i></b>	
<b>StartUp graphene in photoacoustic Dirigent Acoustics</b> Dejan Todorović, Managing Director, Science Technology Park Belgrade, Belgrade, Serbia	10:45-11:15
<b>Single Atom Catalysts: Are They Really Single?</b> doc. dr Ana Dobrota, National Awards winner within the thirteenth cycle of the L'Oréal-UNESCO program "For Women in Science" (2023), University of Belgrade - Faculty of Physical Chemistry, Belgrade, Serbia	11:15-11:45
<b>GrInShield graphene in EMI shielding</b> S. Jovanovic, coordinator of the GrInShield project, VINCA, Serbia	11:45-12:15



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**Green strategy of obtaining metallic nanoparticles anchored to graphene sheets,**

Dr. Dejan Kepić, a WP6 and WP7 leader in the GrInShield project, VINCA, Serbia

12:15-12:35

**Lunch**

12:35-14:00

***Session 3. Measuring the electromagnetic fields at various scales, from space to nano level***

**Electromagnetic field - radio frequency radiation,**

**Prof. Dr. Dušan Mrđa**, Laboratory for Radioactivity and Dose Measurements at the Faculty of Sciences, University of Novi Sad, Novi Sad, Serbia

14:00-14:30

**Uncertainty in the measurement of electromagnetic field**

Dr. Miloš Davidović, Department of Radiation and Environmental Protection, Vinca Institute of Nuclear Sciences, Belgrade, Serbia

14:30-15:00

**Awarding Certificates and Coffee**

15:00-15:20



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