MULTIFUNCTIONAL GRAPHENE-BASED NANOCOMPOSITES WITH ROBUST ELECTROMAGNETIC AND THERMAL PROPERTIES FOR 3D-PRINTING APPLICATION

H2020-MSCA-RISE-2016-734164 Graphene 3D

Polymer Nanocomposites for 3D-printing of Enhanced Porous Structures

GRAPHENE 3D Workshop

Centro Polifunzionale Paradiso of Anacapri, Capri (Italy)

October 3rd-4th, 2019

The "Workshop on Polymer Nanocomposites for 3D-printing of Enhanced Porous Structures" is an event connected with the European Project H2020-MSCA-RISE-2016-734164 Graphene 3D.

"There is a lack of knowledge related to the processing and the development of innovative materials for 3D printing technology. Innovative materials, often realized by exploiting the concepts of nanoparticle and composite, should contribute to improve the properties of the printed objects, while compiling with the printer specifications. Due to many constraints, the designing of these nanocomposites is a challenge that demands intensive theoretical and experimental investigations".

The Workshop contributions will highlight the most interesting results in the field of innovative composite materials as well as will focus on interesting scientific and technological issues concerning the 3D printing technology.

ORGANIZING COMMITTEE

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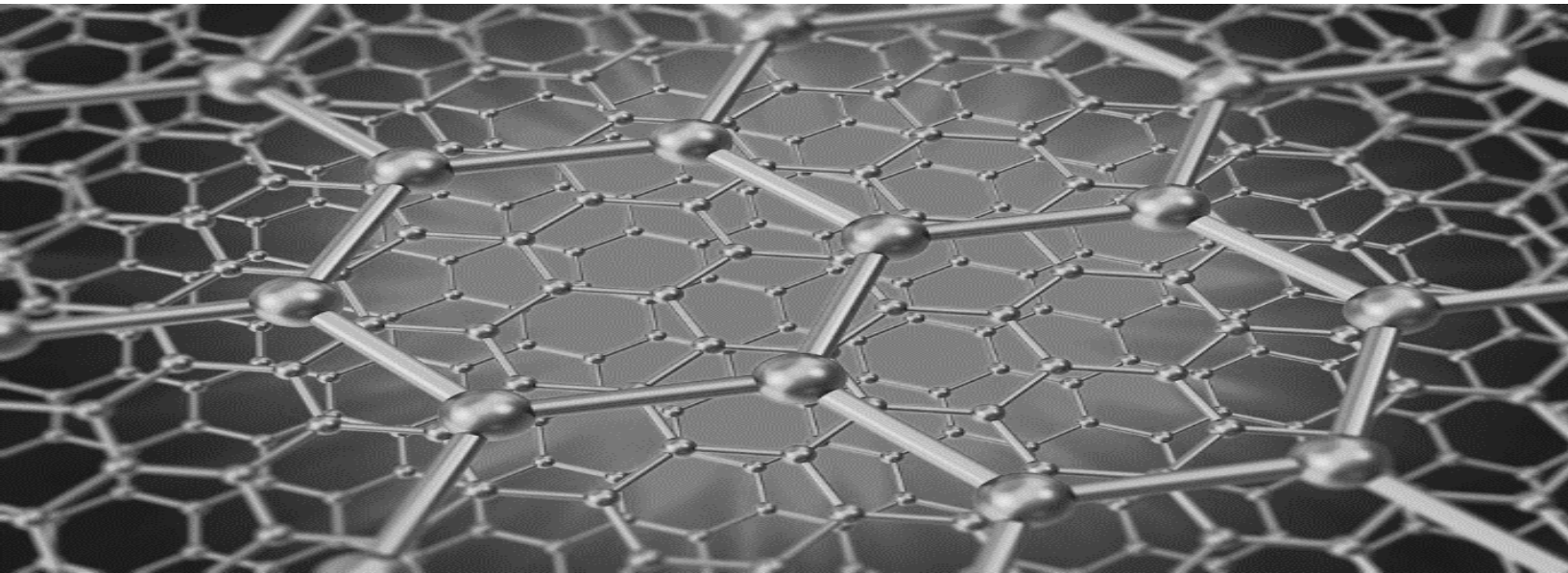

WORSHOP PROGRAM

THURSDAY, OCTOBER 3rd 2019

14.00 – 14.30	**REGISTRATION**
14.30 - 14.50	**OPENING CEREMONY AND WELCOME ADDRESSES** *Prof LUIGI AMBROSIO (IPCB-CNR Director)* *RUMIANA KOTSILKOVA (3D Graphene Coordinator), CLARA SILVESTRE (IPCB-CNR Coordinator in 3D Graphene project)*
1st SESSION	*Chairman: prof Luigi Ambrosio and Rumiana Kotsilkova*
14.50 – 15.30	**PLENARY LECTURE** **The Design Rules for Delivering the Promise of 2D Materials in Composites** *IAN KINLOCH (University of Manchester, UK)*
15.30 – 15.50	**INVITED LECTURE** **Simultaneous Realization of Conductive Segregation Network Microstructure and Minimal Surface Porous Macrostructure by SLS 3D Printing** *HESHENG XIA (Sichuan University, CHINA)*
15.50 – 16.10	**Tailoring the filler morphology to control the structural and physical properties of HAVOH/MWCNT composites for 3D printing application** *CHIARA SANTILLO (Institute of Polymers, Composite and Biomaterials CNR, ITALY)*
16.10 – 16.40	*Coffee Break*
2nd SESSION	*Chairman: Clara Silvestre and Hesheng Xia*
16.40 – 17.00	**INVITED LECTURE** **Medical application for 3D printing: from regeneration to rehabilitation** *ALFREDO RONCA (Institute of Polymers, Composite and Biomaterials CNR, ITALY)*
17.00 – 17.20	**Thermoplastics with carbonaceous fillers for Electromagnetic Interference Shielding** *ANA PAULA GODOY (MackGraphe, Mackenzie Presbyterian University, BRAZIL)*
17.20 – 17.40	**INVITED LECTURE** **Preparation and Characterization of FDM 3D-Printed Multi-Functional Polymer/Graphene-Based Nanocomposites and Parts** *YINGHONG CHEN (Sichuan University, CHINA)*
17.40 – 18.00	**Terahertz optics of materials with spatially harmonically distributed refractive index** *DZIMITRY BYCHANOK (Institute for Nuclear Problems of Belarusian State University, BELARUS)*
20.00 – 22.30	**SOCIAL DINNER @ RESTAURANT "LA ZAGARA"**

FRIDAY, OCTOBER 4th 2019

3rd SESSION	*Chairman: Marino Lavorgna and Philippe Lambin*
9.45 - 10.25	**PLENARY LECTURE** **Process routes towards novel polymer powders for selective laser sintering** *JOCHEN SCHMIDT (Institute of Particle Technology, Friedrich Alexander University, GERMANY)*
10.25 – 10.45	**INVITED LECTURE** **3D Printing for Energy Storage** *CHUHONG ZHANG (Sichuan University, CHINA)*
10.45 – 11.05	**Preparation and morphological, thermal and Mechanical characterization of PLA/MWCNT/GNP composites for 3D printing** *ROSA DI MAIO (Institute of Polymers, Composite and Biomaterials CNR, ITALY)*
11.05 – 11.30	*Coffee Break*
4th SESSION	*Chairman: Paolo Ciambelli and Yinghong Chen*
11.30 – 11.50	**INVITED LECTURE** **3D printed THz perfect absorbers: 2D vs 3D geometry** *POLINA KUZHIR (University of Eastern Finland, FINLAND/Institute for Nuclear Problems of Belarusian State University, BELARUS)*
11.50 – 12.10	**Electromagnetic and thermal properties of Polylactic Acid filled with carbon-based particles for 3D printing applications** *GIOVANNI SPINELLI (University of Salerno, ITALY)*
12.10 – 12.30	**Characterization of rheological and mechanical properties of poly(lactic) acid nanocomposites with graphene and carbon nanotubes** *RADOST IVANOVA (Institute of Mechanics BAS, BULGARIA)*
12.30 – 12.50	**INVITED LECTURE** **Thermal conductive properties of 3D-printed cellular structures** *PHILIPPE LAMBIN (University of Namur, BELGIUM)*
13.00 – 14.00	*Buffet Lunch*
5th SESSION	*Chairman: Polina Kuzhir and Giovanna G.Buonocore*
14.00 – 14.20	**INVITED LECTURE** **Issues connected to crystallinity in 3D printing** *ROBERTO PANTANI/SARA LIPAROTI (University of Salerno, ITALY)*
14.20 – 14.40	**INVITED LECTURE** **PDMS/rGO nanocomposites: Synthesis, preparation, characterization** *NATIA JALAGONIA (Ilia Vekua Sukhumi Institute of Physics and Technology, GEORGIA)*
14.40 – 15.00	**Fabrication of FDM 3D-Printed Polyethylene/Graphene Nanocomposites with Highly Enhanced Thermal Conductivity via Solid-State Shear Milling Technology** *JINGJING JING (Sichuan University, CHINA)*
15.00 – 15.20	**INVITED LECTURE** **Use of Composite Materials for Additive Manufacturing: an industrial perspective** *ALESSANDRO MANZO/FRANCESCO D. CASCONE (3DnA Srl, ITALY)*
15.20 – 15.40	**INVITED LECTURE** **Balancing production and performance in the selection of graphene based filler** *PAOLO CIAMBELLI (Narrando, ITALY)*
15.40 – 16.00	**High strain sensitivity systems of thermoplastic polyurethane/grafene fabricated with selective laser sintering** *GENNARO ROLLO (Institute of Polymers, Composite and Biomaterials CNR, ITALY)*
16.00 – 16.15	**CONCLUDING REMARKS**