

## **COST Action CA19118 - High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications (EsSENce)**

### **Summer school N.1**

### **Preparation and properties of innovative CNMs composites**

**Date September 20 -23, 2021 - Online training school**

#### **Monday, September 20, 2021**

**13:00 – 13:30 W1: Welcome and Introduction**

*Prof. Costas Charitidis (NTUA Athens, Greece)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

**13:30 – 14:15 W2: Preparation and properties of CNM composites**

*Petra Pötschke (IPF Dresden, Germany)*

**14:15 – 14:30 Coffee break**

**14:30 – 15:00 W3: Innovative nanocomposite materials for 3D printing technology  
based on carbonaceous conductive fillers**

*Dr. Marino Lavorgna (IPCB-CNR, Italy)*

**15:00 – 15:20 D1: Selective Laser Sintering 3D printing (SLS) of piezoresistive  
porous composite sensors**

*Gennaro Rollo, Alfredo Ronca (IPCB-CNR, Italy)*

**15:20 – 15:30 Coffee Break**

**15:30 – 16:00 D2: Nanocomposite preparation by mini compounder melt mixing**

*Dr. Rudinei Fiorio (UGent Ghent, Belgium)*

**16:00 – 16:45 P1: Chemical interaction and modifications of polymeric matrix  
materials for CNMs + introduction on project work**

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

**16:45 – 17:00 Q&A**

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

#### **Tuesday, September 21, 2021**

**10:00 – 10:45 W4: Epoxy based CNMs composites**

*TBD*

**10:45 – 11:00 Coffee break**

**11:00 – 12:00 D3: Industrial application of CNMs**

*Chiara Pernechele (Dallara Automobili, IT)*

**12:00 – 13:00 Lunch break**

**13:00 – 14:00 W5: Fibre Reinforced Polymer Composites**

*Prof. Robert Böhm (HTWK Leipzig, Germany)*

**14:00 – 15:00 P2: Project work interaction**

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

*Prof. Dagmar D'hooze (UGent Ghent, Belgium)*

15:00 – 15:15 Coffee Break

15:15 – 16:15 W6: **Nanoindentation and nanomechanical properties  
of polymeric materials**

Prof. Philippe Leclere (UMons Mons Belgium)

16:15 – 17:00 Q&A

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

### **Wednesday, September 22, 2021**

10:00 – 10:40 W7: **Structures and microscopy study of polymeric composites**

*Prof. Karen De Clerck (UGent Ghent, Belgium)*

*Prof. Lode Daelemans (UGent Ghent, Belgium)*

10:40 – 11:15 W8: **Safety issues for Carbon Nano-based materials and composites**

*Dr. Sharali Malik (KIT Karlsruhe, Germany)*

11:15 – 11:30 Coffee break

11:30 – 12:15 D4: **Introduction on STSM labs**

*Stefan G. Stanciu (UBucharest, Bucharest, Romania)*

12:15 – 13:30 Lunch break

13:30 – 14:15 D5: **Thermal conductivity measurements of CNMs**

*Ellen Fernandez & Tom Wieme (UGent Ghent, Belgium)*

14:15 – 14:45 C: **An online insight @ Ghent**

14:45 – 15:00 Coffee Break

15:00 – 16:00 P3: **Project work interaction**

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

*Prof. Dagmar D'hooge (UGent Ghent, Belgium)*

16:00 – 16:30 Q&A

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

### **Thursday, September 23, 2021**

10:00 – 11:30 P4: **Project presentation pitches & awards**

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

11:30 – 12:00: **Closing remarks**

*Prof. Costas Charitidis (NTUA Athens, Greece)*

*Prof. Ludwig Cardon (UGent Ghent, Belgium)*

*Dr. Mariya Edeleva (UGent Ghent, Belgium)*

W: Webinar

D: Demonstration (online or recorded labs)

P: Project work

C: Cultural activity

Q&A: Questions & Answers