PARALLEL SESSION @NANOINNOVATION2023

Prevention-through-design in the industrial scale up of nanomaterials and advanced materials: the "NanoKey Advanced" framework

Date (Time): 20 September 2023 (2:00pm-3:30pm)

Location: Rome, Sapienza University, Via Eudossiana, 18

Abstract: Nanotechnologies and new advanced materials will play an important role as key enabling technologies also in the next energy and green transition, because they can be applied in the enhancement of the efficiency of conventional sources as in low-emission and renewable alternatives. The growing manufacturing and use of advanced materials at the nanoscale call for a responsible approach to evaluate and prevent health and safety (H&S) risks related to size-specific potential effects. As long as exposure limits will be not available to conduct tailored risk analysis, the implementation of a preventive approach may be recommended to anticipate the risks associated with new processes, materials, structures, equipment and tools in the workplace. In this view the Italian Workers Compensation Authority (INAIL) in joint research cooperation with the Italian Institute of Technology (IIT) developed a Prevention-through-design framework called as "Nanokey Advanced" to be adopted by companies implementing H&S aspects starting from the design stages of new and advanced (nano)materials, with expected return of safety investments. Such an approach has been successfully applied to the case studies of graphene and boron nitride advanced nanomaterials production at BeDimensional (BeD) company, with promising application in the industrial scale up of such innovation processes.

PROGRAM

Chairs: F. Boccuni (INAIL), S. Sabella (IIT)

2:00pm-2:15pm The Nanokey Advanced research project: a novel tiered testing strategy for hazard assessment, Stefania Sabella (IIT, Italy)

2:15pm-2:30pm Graphene and boron nitride manufacturing processes at BeDimensional, Francesco Bonaccorso, Antonio Esau Del Rio Castillo (BeD, Italy)

2:30pm-2:45pm The workplace exposure characterization for the prevention-through-design of nano and advanced materials, Fabio Boccuni (INAIL, Italy)

2:45pm-3:00pm The bio-monitoring of exposed workers, Cinzia Lucia Ursini (INAIL, Italy)

3:00pm-3:15pm The experience of FIOH and Graphene Flagship on the occupational exposure to graphene-based nanomaterials, Tomi Kanerva (FIOH, Finland)

3:15pm-3:30pm Questions & Answers and general discussion

Event organized by the Project "NanoKey Advanced" in cooperation with: