



Session description

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Title of the session: Surface Engineering, Coatings and Adhesives

Objectives: A key aspect of engineering materials and structures is their surfaces and interfaces. In many cases, the failure starts by microscopic defects in these areas (formed during manufacturing or developed during operation) and propagates catastrophically to the bulk. Surface engineering involves the methods and techniques used to optimise, characterise and test the material surfaces for an enhanced and safe performance of a mechanical/structural component. Coatings play a major role as they provide the means to develop robust surfaces with special properties in order to not only protect materials from environmental and operational degradation but also to develop new functionalities depending on the application. Examples to be covered in this technical session include:

- Metal-polymer adhesion in fibre metal laminates (FMLs)
- Fibre sizing for fibre reinforced polymers (FRPs)
- Anticorrosion coatings
- Anti(bio)fouling coatings
- Surface treatment for adhesive bonding
- Self-cleaning surfaces
- Protective and decorative coatings
- Advanced tribological coatings combining low friction and wear
- Smart surfaces and nanostructured surfaces