

## **Coatings for tribological applications: modeling and characterization**

### **Organizers:**

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In order to functionalize surfaces, and provide them with specific functionalities (e.g. anti-wear resistance, controlled friction properties, tunable wetting, and optimized lubrication properties) a better understanding and a in depth characterization of the tribo-mechanical properties of the coating itself (e.g. Elastic modulus, yield strength, adhesion, intrinsic stresses, fracture, .etc) is of utmost importance. The ultimate goal is to find materials and structural solutions, which keep the stress-strain field resulting from typical operating conditions below the stability limits of the system, or able to tune the surface properties to allow for tunable friction, adhesion and lubrication properties.

The theoretical and experimental significance and the emergent novel applications related to coatings have drawn the attention of a larger and interdisciplinary scientific community, involving expertise from engineering, physics and mathematics.

The purpose of this minisymposium is to provide a forum and a survey for the most recent advances in the field of coatings addressing the challenges in modern engineering applications.

We invite authors to submit original theoretical and experimental research and review articles, which stimulate the continuing efforts to understand and improve the knowledge in these fields. We are particularly interested in contributions focusing on mechanical behavior, contact, fracture, wear, friction and wetting of coatings and coated surfaces. Live-demos of tribological characterization and functionalization are also welcome.

Potential topics include, but are not limited to:

- fracture, fatigue and wear contact
- lubrication and friction
- advanced numerical techniques predicting the tribo-mechanical properties of coatings
- new functionalization techniques
- characterization techniques: indentation, scratch and tribological testing