

# RECITS Seminar

March 13th, 2024

From 10 a.m. to 11 a.m.

Seminar room, CAM building  
Faculty of Mathematics, USTHB.

**Speaker:** Elsedik LAMINI,

**Title.** Numerical investigation of thermal stresses induced interface delamination in plasma-sprayed thermal barrier coatings

## **Abstract.**

This work explores the failure mechanisms of thermal barrier coatings (TBCs) under extreme conditions. A discrete element model examines thermal stresses generated by differences in thermal expansion between layers, while temperature-dependent material properties are considered.

Image analysis segments TBC microstructures, revealing interface irregularities linked to coating failure. This approach combines image processing and mathematics to better understand the challenges of TBCs in severe environments.