



11th International Conference
on Advanced Materials

Rio de Janeiro Brazil
September 20 - 25

Geometry and bluntness tip effect on elastic-plastic behavior during nanoindentation of reference materials: Experimental and FEM simulation

David Torres Torres - CINVESTAV
J Muñoz Saldaña - CINVESTAV
A Hurtado Macías - CIMAV
G Trápaga Martínez - CINVESTAV

Finite element computations were carried out to simulate Berkovich indentation measurements with different combinations of material properties and stress states. The indenter bluntness reproduced from AFM and SEM measurements was taken into account on a 3D model that allowed the full description of the experimental indentation data. This model allowed the analysis of the von Mises equivalent stresses from the simulated data and gives rise to an excellent tool for a full characterization of mechanical properties of the specimens from load-displacement data.