

Optical roughness calculation for material structural analysis of energy structure applications under dc plasma processes

Author

Alper Pahsa

Abstract

Surface qualities make aluminium a low-DC plasma interaction candidate. Aluminum for energy system structure building is studied experimentally, with observations obtained. Aluminum is cheap and frequently utilized in aerospace applications. The selection of materials for new applications of thermonuclear fusion energy, such as Tokamak reactor walls and fusion-based spaceship thrust structures, is important to decide in the design phase. In this study, an experimental setup application is created with low DC-type He plasma ions processed on aluminium pellet surfaces. The physical changes of the aluminium pellet material as an example of an energy structure surface are analysed under a scanned array microscope and 3D surface plots to detect optical roughness attributes.

DOI: <https://doi.org/10.32933/ActaInnovations.49.5>

Keywords

Tokamak reactors; plasma material interaction; sputtering; 3DSurface Plot, Optical Roughness

