

Time: Monday May 2nd, 2011 4:00pm

Location: Buchanan A202

Auxetic materials - Applications

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This talk aims on mathematical modeling of enhanced mechanical properties of auxetic material such as increased shear stiffness, plane strain fracture toughness and indentation resistance which make them superior to conventional materials for many practical applications in biomedical, aerospace, sensors and actuators and many other fields. A metallic implant in a layered substrate is modeled by a layered half space with a layer of isotropic auxetic material perfectly bonded to non-auxetic half space. The implant is considered to be rigid, undeformable conical and spherical element. The results are obtained for variety of parameters in particular including the sizes of indenters and angle of contact.