

**DEPARTMENT OF MECHANICAL ENGINEERING****SEMINAR****Online**

Title: Introduction to fracture toughness and test methods

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Date: 28 April, 2022 (Thursday)

Time: 10:00 a.m. (Hong Kong Time)

Zoom meeting: 1) Link to join the meeting:

<https://hku.zoom.us/j/92878358928?pwd=VUI3bG53RkRha0V0Z2l6Y0NURTVSdz09>

2) Meeting ID: 928 7835 8928

3) Password: 95jTbQ

Abstract:

With the rising popularity and application of advanced alloys, there is an increasing need to ensure the safety of its use. Fracture mechanics is a discipline within engineering that quantifies the conditions in which a load-bearing structural component may fail due to a propagation of a significant crack within that component. Fracture mechanics research develops parameters which characterize the tendency of a crack to extend and lead to failure. These parameters should be able to relate laboratory test results to real world structural performance, so that the behaviour of a cracked structure can be predicted from data from laboratory tests. The parameters are determined as a function of material behaviour, crack size, structure geometry and load conditions. The critical value of these fracture parameters is known as fracture toughness. Among multiple methods of quantifying fracture toughness in materials that show elastic-plastic behaviour, the J-integral method and the crack tip opening displacement (CTOD) method are successful and widely applied in fracture analysis.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. M.X. Huang at 3917 7906.

Research area: Advanced Materials