

## NIK MOHD ASRI BIN NIK LONG

### Ph.D. (University of Manchester)

Assoc. Prof. Dr.  
Department of Mathematics  
Faculty of Science  
Tel: 03 89466863/6811  
Fax: 03 89437958  
nmasri@upm.edu.my



#### EXPERTISE

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Assoc. Prof. Dr. Nik Mohd Asri Bin Nik Long is the Head of Mathematics Department and also member of Laboratory of Computational Sciences and Informatics, Institute for Mathematical (INSPEM) UPM. His major research areas include fracture mechanics (investigating the behavior of solution of crack in two and three dimension), numerical solution to the integral equations (with weak, Cauchy, strong/hypersingular kernel). Major sponsors of research work include the ScienceFund (Ministry of Science and Innovation of Malaysia (MOSTI), Research University Grant Scheme (RUGS) and Fundamental Research Grant Scheme (FRGS).

#### Current Research Interest

- **Cracks problem in plane elasticity**

The crack problems in plane elasticity are formulated into hypersingular integral equations through complex potential method. These equations are then solved numerically for the unknown coefficients, and subsequently, other physical properties of the crack can be determined.

Apart from numerical approach, analytical effort are also being made to solve the closed curved crack problems. The main tool is the modified complex potential method.

- **Integral equations**

Develop an approximate solution of the integral equations (with weak, Cauchy, strong/hypersingular kernel). These equations appear in many engineering problems, most of them have no analytical solutions, and therefore searching a good approximation solution becomes a vital work.

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#### LINK TO POSTGRADUATE FIELD OF STUDY:

Applied Mathematics

#### ADDITIONAL INFORMATION: