

## **Irwan Herman bin Onn**

**Email:** [irwanhrmn@gmail.com](mailto:irwanhrmn@gmail.com)

**Mobile phone:** 013-3171722

**House phone:** 07-2300941

**Current & Permanent Address:** No. 8, Jalan Padi Huma 2, Bandar Baru UDA, 81200, Johor Bahru, Johor.

### **Career Objectives**

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- Seeking for an engineering-related job in Johor Bahru.
- Available from September 2013.
- Expected salary: RM3500.

### **Education**

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#### **Universiti Teknologi Malaysia**

*Pursuing PhD in Mechanical Engineering and conducting research on “Damage-mechanics based Fatigue Crack Initiation Life Prediction for Sheet Metal”*

**Period:** Since 7/2010.

Currently in final stage; writing thesis.

#### **University of Fukui, Japan**

*Research Assistant (RA)*

**Period:** 4/2007-3/2010

#### **University of Fukui, Japan**

**Master of Nuclear Energy and Safety Engineering**

**Date of Graduation:** March, 2007

#### **University of Fukui, Japan**

**Bachelor of Mechanical Engineering**

**Date of Graduation:** March, 2005

**Malay College Kuala Kangsar, Perak.**

**SPM Year:** 1998

### **Research Fields**

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- Material Mechanics, Fatigue and Fracture Mechanics, Damage Mechanics, Finite Element Method (Stress and Failure Analysis)

### **Publications**

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#### **Journal Papers**

- Yunan Prawoto, Irwan H. Onn, Modified Fourier solution for diffusion governing law applied to blister formation and development, *Computational Materials Science*, 62 (2012), pp. 105-109 (IF: 1.574).
- Yunan Prawoto, Irwan H. Onn, Application of J-integral concept on blister coating problem, *Engineering Fracture Mechanics*, 92 (2012), pp. 114-125 (IF: 1.353).

#### **Conference Papers**

- “Fatigue Characteristics of Dual Phase Steel Sheets” FEOFS 2013, Jeju, Korea.
- “Fracture Mode Prediction Method for Pipes with Wall Thinning by using the History Data of Strain Ratio” at ASME PVP 2008 Conference, Chicago, U.S.
- “Effect of Flaw Geometry on the Fracture Behavior of Wall-thinned Pipe under Internal Pressure” at ICF 12 2009, Ottawa Canada .
- Published and presented around **10** domestic conference papers for Japan Society of Mechanical Engineers (JSME), Japan society of Maintenance (JSM) and Atomic Energy Society of Japan (AESJ).

#### **Theses**

- Bachelor’s Degree: Simulation Investigation of Stress Intensity Factor Range Threshold Dependency on Microstructure.
- Master’s Degree: Wall-thinned Pipe Fracture Mode Prediction.

## **Research Projects**

- Technofund Project “Computationally Optimized Fuel-Efficient Concept Car” (MOSTI, July 2010 – Feb 2012)
  - Team member of Sub-Project No. 25 “Damage and Fracture Mechanics-Based Design Methodology” UTM.
  - Scope of Work: Experimental Work on Fatigue Characterization on Dual-Phase Sheet Metal and Reporting.
- Japan National Project “Improvement of Fracture Mode Evaluation Method for Straight Pipe with Local Wall Thinning for Nuclear Power Plants” (April 2006 – Feb 2010)
  - Scope of Work: Experimental and Simulation Work on Wall-thinned Pipes.

## **Consultation Jobs**

- Petronas Gas Berhad (PGB) Valve Failure Analysis Project (Jan 2012-June 2012)
  - Scope of Work: Stress Analysis and Natural Frequency Analysis using FEM.
- BASF (Malaysia) Sdn Bhd Silo Failure Analysis and Strengthening Structure Design Project (Feb 2012 – March 2012)
  - Scope of Work: Stress Analysis using FEM and Structure Design, Construction Assessment and Reporting.

## **Skills**

### **Computer**

- Proficient with finite element software; Abaqus and Msc. Marc and Mentat to perform 3D non-linear stress analysis.
- Minimally used CATIA, Auto-CAD & Solidworks (CAD/CAE), Matlab (Numerical), ModeFrontier (Optimization), Deform 3D (Metal Forming/Tools Design), Mathematica (Mathematics), FE-Safe (Fatigue Simulation), LaTeX (Document Preparation), Fortran (Programming) and Msc.Patran (Finite Element).

### **Laboratory/Experimental/Workshop**

- Conducted load controlled fatigue test according to ASTM E466.
- Conducted burst tests and 4-point bending tests of straight wall-thinned pipe.
- Experienced in material characterization tests; tensile test, hardness test, microstructure observation.
- Hands on with laboratory equipments (Optical microscope, Pressure sensor, High speed camera, Strain amplifier, Data logger, Strain gauge).

### **Language**

- Proficient in English, Japanese and Malay (both writing and speaking).

## **Scholarship**

- Ministry of Education Japan Scholarship for Bachelor and Master program.
- Biasiswa Persekutuan JPA for PhD. program.

## **Activities**

**President of Malaysia Student Association in Japan (Hokuriku Branch)**

**Period: 2003-2004**

## **Strengths**

- 5 years experience conducting research at University of Fukui, Japan and 3 years at Universiti Teknologi Malaysia.
- Possesses skills to conduct various mechanical testings and experiments and perform finite element simulation of stress and failure analysis.
- Able to be a leader, team player as well as independent worker.
- Hardworking and committed to job.

## References

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1. **Dr. Mohd Nasir Tamin ( Professor)**  
Address: Faculty of Mechanical Engineering,  
Universiti Teknologi Malaysia,  
Skudai, Johor.  
Phone: 012-778 1410      Email: [taminmn@gmail.com](mailto:taminmn@gmail.com)
2. **Dr. Osamu Kuwazuru (Associate Professor)**  
Address: Faculty of Nuclear Energy and Safety Engineering,  
University of Fukui, JAPAN.  
910-0017 Fukui ken, Fukui shi, Bunkyo 3-9-1  
Phone: 0776-27-9728      Email: [kuwa@u-fukui.ac.jp](mailto:kuwa@u-fukui.ac.jp)
3. **Dr. Ken-ichi Fukumoto (Associate Professor)**  
Address: Faculty of Mechanical Engineering,  
University of Fukui, JAPAN.  
910-0017 Fukui ken, Fukui shi, Bunkyo 3-9-1  
Phone: 0776-27-9712      Email: [fukumoto@u-fukui.ac.jp](mailto:fukumoto@u-fukui.ac.jp)
4. **Prof. Kiyoshi Nakashima**  
Address: International Student Center,  
University of Fukui, JAPAN.  
910-0017 Fukui ken, Fukui shi, Bunkyo 3-9-1  
Phone: 0776-27-8903      Email: [ukujima@u-fukui.ac.jp](mailto:ukujima@u-fukui.ac.jp)