



#### **Biography - Taib Iskandar Mohamad**

Taib Iskandar is currently an Associate Professor at Mechanical Engineering Technology Department, Yanbu Industrial College and was Head of Research Project Unit at Yanbu Research Center, both under Royal Commission of Yanbu - Colleges and Institutes (RCYCI) Division, Kingdom of Saudi Arabia. Additionally, Taib is entrusted to lead RCYCI's Renewable Energy Center and Editorial Board Member for Yanbu Journal of Engineering and Science. Previously, he worked at the National University of Malaysia (UKM) as a Senior Lecturer at the Department of Mechanical and Materials Engineering between 1996 and 2015. He maintain the position at UKM as Associate Senior Fellow at the Centre for Automotive Research, where he was the founding Deputy Head. Taib completed his Ph.D. at Cranfield University (2006), MEng at Vanderbilt University (1999) and BSME at University of Arizona University (1996). His research interests lie in the area of natural gas engine, direct fuel injection and engine component design. His continuing interest in advanced engine include TCDI, RCCI and GCI engine. His secondary interest is solar thermal engineering particularly in the development of a solar hot water system using polymer thermal absorber. To date Taib has completed 3 funded research projects with about SAR800,000 total funding from government of Malaysia. In 2013 his SAR2 million project proposal to Saudi Arabia's NSTIP funding on turbocharged direct injection gas engine in collaboration with Clean Combustion Research Center at KAUST and Water & Energy Research Institute at KACST. He has more than 70 technical publications in refereed journals, book chapter, a book and various conference proceedings. He is a regular reviewer for reputable journals in energy area – Energy Conversion and Management, Fuel, Renewable and Sustainable Energy Review, Journal of Natural Gas Science and Engineering, Proceedings of IMechE – Journal of Automobile Engineering, Applied Thermal Engineering and many more. Taib's teaching specialties are Thermodynamics, Power Plant Engineering, Renewable energy systems and Internal Combustion Engines. In 2010, Taib received an "Excellent Educator" Awards while in UKM. In the same year he lead a team of students to win the Gasoline Alternative Category awards in the Shell Eco-Marathon Asia 2010 with their LPG-converted engine with 479km/liter.

## TAIB ISKANDAR MOHAMAD

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### Summary of Work Experience

#### Royal Commission of Yanbu (Colleges and Institutes Division) – Saudi Arabia

**Associate Professor** - Mechanical Engineering Technology Dept., Yanbu Industrial College – since 5/2019

**Assistant Professor** - Mechanical Engineering Technology Dept., Yanbu Industrial College – 11/2011

#### National University of Malaysia – Malaysia

**Senior Lecturer** - Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment - 11/1996 – 9/2015

**Associate Senior Fellow (Founding Deputy Head)** - Center for Automotive Research – 2009-2016

### Education

**CRANFIELD UNIVERSITY**, Cranfield, Bedfordshire, United Kingdom

DOCTOR OF PHILOSOPHY – MECHANICAL ENGINEERING, 2006

**VANDERBILT UNIVERSITY**, Nashville, TN, USA

MASTER OF ENGINEERING – MECHANICAL ENGINEERING, 1999

**UNIVERSITY OF ARIZONA**, Tucson, AZ, USA

BACHELOR OF SCIENCE – MECHANICAL ENGINEERING, 1996

### Professional Bodies Affiliation

Board of Engineers Malaysia (GE57071A)

Society of Automotive Engineers (6108762529)

Combustion Institute

### Other Experience

- Visiting Scholar – Florida Solar Energy Center in Cocoa, Florida – hydrogen production by photo chemical process (Jan-Feb 2007)
- Visiting Research Scholar Department of Mechanical Engineering, University of Miami, Florida – PIV measurement of high pressure pulsed gas jet injection in liquid environment (Oct 2010-Aug 2011).

### Research Interest

- Gaseous-fuelled direct injection engines – natural gas, methane, hydrogen
- Fuel and combustion analysis
- Engine architecture and subsystem development
- Flow Visualization

### Research Projects

#### As Principal Investigator

1. Development and investigation of a low emission high efficiency turbocharged direct injection gas engine study - King Abdulaziz City of Science & Technology (KACST-NSTIP) (SAR1,988,000) – approved in 2013.
2. Development of a cost-competitive internally mixing natural gas conversion system for Malaysian manufactured automotive engine using Spark Plug Fuel Injector - Ministry of Science Technology and Innovation Malaysia (MYR164,940) (Dec 2008 – Nov 2010)
3. Studies on Hydrogen-Methane blend as Fuel for Extra Low-Emission Spark Ignition Engines -Ministry of Science Technology and Innovation Malaysia (MYR237,000) (Dec 2008 – Nov 2010)
4. Development of a Pressure Differential Adaptive Valve Lift and Timing for a CNGDI Engine - Ministry of Higher Education Malaysia (MYR400,000) (Oct 2007 – Jun 2010)

### Publications

**Books / Chapters in books (3), Journal articles (40), Conference papers (49)**

*Featured publications:*

1. Abshir Ashour, Taib Iskandar Mohamad, Selvin Thomas, Yusuf ina, Syed Azeem, Adnan Ibrahim, Kamaruzzaman Sopian, Deployment of rooftop solar photovoltaic electrification for residential

- buildings in Saudi Arabia's industrial city: A study on public perception and acceptance in Yanbu Industrial City, *International Journal of Renewable Energy Research*, June **2021**) (*Scopus*)
2. Muhammad Asyraf Mohd Azmi, Mohd Radzi Abu Mansor, Wan Mohd Faizal Wan Mahmood, Taib Iskandar Mohamad, **2018**, Numerical Study of the Effect of Injection Strategy and Compression Ratio on Gasoline/Diesel Fueled RCCI Engine, *SAE Technical Paper 2018-32-0017*. (*Scopus*)
  3. Mansor M.R.A., Abbod M.M., Mohamad T.I., **2017**, The influence of varying hydrogen-methane-diesel mixture ratio on the combustion characteristics and emissions of a direct injection diesel engine. *Fuel*, 190:281-291. (*ISI – IF 4.601*)
  4. Mohamad T.I., **2015**, In-Water Injection of High-Pressure Pulsed Gas Jet: Simple Analytical Tool for Direct Injection of Gaseous Fuels in Automotive Engine, *Fuel*, 160:386-392. (*ISI – IF 4.601*)
  5. Binjuwair S., Mohamad T.I., Alkudsi A., Alshunaifi I., **2015**, The effects of research octane number and fuel systems on the performance and emissions of a spark ignition engine: A study on Saudi Arabia RON91 and RON95 with PI and DI operations, *Fuel*, 158:351-360. (*ISI – IF 4.601*)
  6. Mohamad T.I., How H.G., **2014**, Part-load performance and emissions of a spark ignition engine fuelled with gasoline RON95 and RON97: Technical viewpoint on Malaysia's fuel price debate, *Energy Conversion and Management*, 88:928-935. (*ISI – IF 5.589*)
  7. Mohamad T.I., Harrison M., Jermy M. and How H.G., **2010**, The Structure of High Pressure Gas Jet from Spark Plug Fuel Injector for Direct Fuel Injection in Spark Ignition Engine, *Journal of Visualization*, 13(2):121-131. (*ISI – IF 0.95*)
  8. Mohamad T.I., How H.G., Abdullah S., Ali Y., Harrison M. and Jermy M., **2010**, The Combustion and Performance of a Converted Direct Injection Compressed Natural Gas Engine using Spark Plug Fuel Injector, *SAE Technical Paper 2010-32-0078* (*Scopus*)
  9. How H.G., Mohamad T.I. and Abdullah S., **2009**, Experimental Investigation of Performance and Emissions of a Sequential Port Injection Compressed Natural Gas Converted Engine, *SAE Technical Paper 2009-32-0026* (*Scopus*)
  10. Taib I Mohamad, Matthew Harrison, Mark Jermy, Shahrir Abdullah, **2006**, Combustion and performance of spark plug fuel injector (SPFI) system for direct injection of methane in spark ignition engine for low cost conversion, *SAE Technical Paper 2006-05-0370* (*Scopus*)
  11. Taib Iskandar Mohamad (**2013**), Spark Plug Fuel Direct Injection Natural Gas Engine: Boosting the "Green" Natural Gas Vehicle performance with a technical simplicity of direct fuel injection, Lambert Academic Publishing, (ISBN 978-3-659-17523-7)

#### Management and Leadership Roles

At Royal Commission of Yanbu Colleges and Institutes

- Head of Research Project Unit at Yanbu Research Center, 2015-2019.
- Editor, Yanbu Journal of Engineering and Sciences, since 2017.
- Manager– Center of Renewable Energy, January 2016 – August 2017

At National University of Malaysia

- Deputy Head – Centre for Automotive Research, 2009-2010
- Coordinator – MSc Environmental Engineering program, 2009-2010
- Chief Editor, Monthly Bulletin, Department of Mechanical and Materials Engineering, 2007 – 2009

#### Graduate Research Supervision

PhD	Abshir Ashour (2019-2022)	Techno economic study of solar-diesel electricity system for residential application in west coastal region of Saudi Arabia
PhD	Md Isa Ali- 2015	Performance and Emission Characteristics of Waste Vegetables Oil (WVO) Biodiesel Fuel
PhD	Javed Zarei - 2014	Development Fuel Injector for Hydrogen-Natural Gas Fuel in Direct Injection Engine
PhD	Layth Hasan Jawad - 2014	Design of gas turbine blades for optimum performance
MSc	Ahmad Fuad Abd Rasid - 2013	Development of Pressure Differential Adaptive Valve Timing and Lift Mechanism for a Spark Ignition Engine
MSc	How Heoy Geok - 2010	Development of Spark Plug Fuel Injector for Direct Injection of Compressed Natural gas in a multi-cylinder SI Engine

#### Graduate Examination Committee

PhD – 1 external examiner, 4 internal examiner  
MSc – 8 internal, 4 external examiners

**REFEREES****Professor Kamaruzzaman Sopian** (Mentor at previous job)

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**Professor Mark C. Jermy** (PhD Supervisor)

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**Dr. Selvin Thomas** (Colleague)

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