



Zhwan Dilshad

## PROFILE

An experienced, young, professional and driven intermediate, accomplished lecturer combines two educational aptitudes in academic career –Lecturing and research. Broad based theoretical, practical and teaching experience with specializations in the following areas:

- Performing high quality research and analysis on mechanical and materials engineering.
- Lecturing undergraduate courses of mechanical engineering, at the first/second/third and final year level.

My vision is to attain high academic, professional and experimental skills to contribute toward the community. My mission is to follow up the state of the art researches, continue teaching different topics, keep abreast with latest technological advancement R&D activities and to work collaboratively with technical Institutes/Universities/ Industries of national and international repute to combine the academic research field with the experimental skills.

## OBJECTIVE

Seeking an academic position as a researcher and lecturer in the field of ceramics, advanced materials, applied mechanics and tribology. Perform research, including teaching courses and supervising students in their academic assignment and research work.

## EDUCATION

PhD, Materials Engineering, University Science of Malaysia 2012-2016

Thesis: *Fracture Toughness Enhancement of Zirconia Toughened Alumina (ZTA) Through Additions of Combination of CaCO<sub>3</sub> and CaO.*

MSc, Mech. Department, Eng. College, Salahaddin University 2006-2009

Thesis: *Effect of Temperature Rise on the Surface Roughness of Machined Parts.*

BSc, Mech. Department, Eng. College, Salahaddin University 2000-2004

## RESEARCH AREA INTERESTS

- Advanced Materials
- Sustainable Design
- Cutting Tools
- Ceramics (nanomaterials and microscale)
- Advanced electron microscopy techniques for atomic scale imaging and analysis (TEM, EDX, HREM, FESEM)
- *In situ* techniques
- Tribology and Micro-Electronic-Mechanical-System (MEMS)
- 3D Printing
- Applied Mechanics and numerical simulation

## PUBLICATIONS

### Refereed Journal Articles

1. **Zhwan Dilshad Ibrahim Sktani**, Ahmad Zahirani Ahmad Azhar, Mani Maran Ratnam and Zainal Arifin Ahmad. "The Influence of In-Situ formation of Hibonite on The Properties of Zirconia Toughened Alumina (ZTA) Composites". *Ceramics International*, (40), 2014, 6211-6217. (Q1). <https://doi.org/10.1016/j.ceramint.2013.11.076>
2. **Zhwan Dilshad Ibrahim Sktani**, Mani Maran Ratnam and Zainal Arifin Ahmad. "Influence of Combined CaO and CaCO<sub>3</sub> Additions on the Microstructure and properties of ZTA". *Journal of the Australian Ceramic Society*. (52) [1], 2016, 167-176. . (Q4 "Q2 during submission"). <http://austceram.com/volume-52-number-1-2016/>
3. Nik Akmar Rejab, **Zhwan Dilshad Ibrahim Sktani**, Tan Yong Dar, Wan Fahmin Faiz Wan Ali, Abdul Rashid Jamaludin, Zainal Arifin Ahmad "The Capability of Hibonite Elongated Grains to Influence Physical, Microstructural, and Mechanical Properties of Zirconia Toughened Alumina-CeO<sub>2</sub>-MgO ceramics". *International Journal of Refractory and Hard Materials*. (58), 2016, 104-109. (Q1). <https://doi.org/10.1016/j.ijrmhm.2016.04.008>
4. Nik Akmar Rejab, Wei Kean Lee, **Zhwan Dilshad Ibrahim Sktani**, Zainal Arifin Ahmad "Hardness and toughness enhancement of CeO<sub>2</sub> addition to ZTA ceramics through HIPping technique". *International Journal of Refractory and Hard Materials*. (69), 2017, 60-65. (Q1). <https://doi.org/10.1016/j.ijrmhm.2017.08.002>
5. **Zhwan Dilshad Ibrahim Sktani**, Nik Akmar Rejab, Mani Maran Ratnam and Zainal Arifin Ahmad. "Fabrication of tougher ZTA ceramics with sustainable high hardness through (RSM) optimisation". *International Journal of Refractory Metals and Hard Materials*. (74), 2018, 78-86. (Q1). <https://doi.org/10.1016/j.ijrmhm.2018.03.006>
6. **Zhwan Dilshad Ibrahim Sktani\***, Nik Akmar Rejab and Zainal Arifin Ahmad. "Tougher and harder Zirconia Toughened Alumina (ZTA) composites through in situ microstructural formation of LaMgAl<sub>11</sub>O<sub>19</sub>". *International Journal of Refractory Metals and Hard Materials*. (69), 2018, 60-68. (Q1). <https://doi.org/10.1016/j.ijrmhm.2018.11.009>

### Refereed Conference Papers

1. Nik Akmar Rejab, **Zhwan Dilshad Ibrahim Sktani**, Afifah Mohammad Ali and Zainal Arifin Ahmad. "Role of Ce<sub>2</sub>Zr<sub>3</sub>O<sub>10</sub> Phase on the Microstructure and Fracture Toughness of ZTA Composites". *Materials Science Forum*, (840), 2016, 57-60. <https://doi.org/10.4028/www.scientific.net/MSF.840.57>
2. Nik Akmar Rejab, **Zhwan Dilshad Ibrahim Sktani**, Nurul KhairunnisaSu, Johar Banjuraizah, Hasmaliza Mohamad, Mohd Nazri Idris and Zainal Arifin Ahmad. "Role of pentavalent niobium oxide additions on the microstructure and structure of zirconia toughened alumina using hot isostatic press sintering". *AIP Conference Proceedings* 2068, 020072 (2019); <https://doi.org/10.1063/1.5089371> .
3. Mustafa Ali Azhar, **Zhwan Dilshad Ibrahim Sktani\***, Nik Akmar Rejab, Kong Chee Xian and Zainal Arifin Ahmad. "Role of Addition of La<sub>2</sub>O<sub>3</sub> on the phase contents, microstructure and mechanical properties of ZTA-MgO ceramics". In proceedings of the The 6th International Conference on Recent Advances in Materials, Minerals and Environment (RAMM 2018). **Materials Today: Proceedings. Under press.**

### Role of addition of La<sub>2</sub>O<sub>3</sub> on the phase contents, microstructure and mechanical properties of ZTA-MgO ceramics

Corresponding author	Dr. Z. D. I. Sktani
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Our reference	MATPR9060
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### Under-review manuscripts

1. Ali Arab<sup>1\*</sup>, **Zhwan Dilshad Ibrahim Sktani\***, Qiang Zhou, Zenial Ariffin Ahmad, Pengwan Chen. "Effect of Effect of the MgO addition on the mechanical and dynamic properties of Zirconia Toughened Alumina (ZTA) ceramics". Journal of European Ceramics Society (Q1).
2. Nik Akmar Rejab, **Zhwan Dilshad Ibrahim Sktani\***, Mani Maran Ratnam and Zainal Arifin Ahamd. "Simultaneous Additions of La<sub>2</sub>O<sub>3</sub> and CeO<sub>2</sub> for Inducement of Higher ZTA Hardness and Indentation Fracture Resistance". Journal of Ceramics International. (Q1)

### Under-preparation manuscripts

1. **Zhwan Dilshad Ibrahim Sktani** and Zainal Arifin Ahamd. "Novel in situ LaMgAl<sub>11</sub>O<sub>19</sub>/CaAl<sub>12</sub>O<sub>19</sub>/ZTA composites with enhanced microstructure and mechanical properties for cutting inserts through Response Surface Methodology (RSM)".
2. **Zhwan Dilshad Ibrahim Sktani** and Zainal Arifin Ahamd. "Approaches and progress in enhancement of mechanical properties of Zirconia Toughened Alumina (ZTA) ceramics: strengths and limitations".
3. **Zhwan Dilshad Ibrahim Sktani**, Mani Maran Ratnam and Zainal Arifin Ahamd. "Recent progresses in fabrication and potential application of 1D SiC nanostructures".
4. **Zhwan Dilshad Ibrahim Sktani** and Young-Wook Kim. "Synthesis, development and progress of nanometer SiC applications and enhancement of insulation properties.

\* **Corresponding Author**

### EXPERIENCES

**Lecturer, Erbil Polytechnic University**

October 2017-present

School of and Materials and Mineral Resources Eng., USM, Malaysia.

October 2012-2016

#### **Research Assistant, Doctoral level**

Air Cond. & Ref. Department, Erbil Technical College

September 2010-September 2012

#### **Assistant Lecturer**

Mech. Department, Eng. College, Salahaddin University

September 2009-September 2010

**Assistant Lecturer** (Part Time)

ITISALUNA Through Iraq Company

June 2008-June 2009

**HR Assistant****Admin duties**

Namam Company for Construction &amp; Highway

February 2008-June 2008

**Site Manager**

IRATRAC Company (CATERPILLAR'S Dealer in Iraq)

May 2006- September 2006

**Counter sales engineer**Zana Company  
2006

January 2006-May

**Site Manager**Central Exchange office  
2010

January 2005- September

**Mechanical Engineer** (Part Time)

Middle East Corporation for Reconstruction &amp; Investment Company

January 2005-June 2005

**Mechanical Engineer****ADDITIONAL SKILLS and/or EXPERTISE**

- **Computer & Machine Skills**

**Applications:** Minitab, Design Expert, AutoCAD, Sigma plot, Excel, Word, PowerPoint, HighScore X'pert, Eva, Image processing, Adobe Photoshop.

**Machining:** Milling Machine, Lathe, Drill Press, and Polisher.

**Inspecting:** Rockwell Hardness Tester, Electronic Height Gauge, Metallography, Thermocouple, Comparator, Oscilloscope, Strobotachometer, Strain Gauge, Force Gauge

- **Field Expertise:** Optimisation, Design of Experiment (DOE), Ceramics, Machines, Generators, Repairing of Automobiles and heavy machines, HR & Administration, Accountant issues, Finance, and Logistics.

- Full clean driving licence (Malaysian, Iraqi & International).

**LANGUAGES**

Kurdish: Native Language

English: Fluent

Arabic: Fluent

Bahasa Malaysia: Intermediate (Communicate with people)

Chinese Mandarin: Beginner

Vietnamese: Beginner

**HOBBIES & INTERESTS**

Reading: language, historical, documentary &amp; travelling guide books.

Writing: papers, short paper reviews &amp; research publications.

Sports: swimming, jogging, hiking, cycling and snorkeling.

Travelling: Thailand, Vietnam, Laos, Jordan and Malaysia.

Nature: sightseeing, beach walking, environment friendly volunteer &amp; photography.