

## **Dr. Asma Salman**

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### **Strengths and Abilities**

I have ten years of education in the field of metallurgy and materials engineering along with fifteen years of teaching and research experience at university level. I have been involved with Ti research group at WAiCAM (Waikato Centre for Advanced materials), University of Waikato for six years as post-graduate student and research officer. I have also invaluable experience of research project management, administration and industrial liaison. My education and practical experience in the field of materials science is well sufficient to support any group involved in materials research. I am highly motivated, and capable of working independently or as part of a team. I am able to manage myself and my workload and always strive to produce quality results.

### **Education**

**2006 – 2011:** PhD in Materials and Process Engineering, Department of Engineering, The University of Waikato, Hamilton

Thesis Title: Study of Titanium based Composite Coatings for Resistance against Molten Aluminium Soldering on H13 Tool Steel.

**2003 – 2005:** MSc (Metallurgical and Materials Engineering), Department of Metallurgical and Materials Engineering, The University of Engineering and Technology, Lahore, Pakistan

Thesis Title : Strengthening and Characterisation of Ni-Cr Alloy for dental crowns and bridges by investment/centrifugal casting technique.

**1997 – 1998:** MCS (Computer Science), Department of Computer Science, Punjab Institute of Computer Sciences, Lahore

**1991 – 1995:** BSc (Metallurgy and Materials Science), Department of Metallurgy and Materials Science, University of the Punjab, Lahore

### **Professional Experience**

**April 2012 – Present:** Assistant Professor, Department of metallurgy and materials Engineering, University of the Punjab, Lahore

**Mar 2011 – Jan 2012:** Postdoc Researcher, WaiCAM, The University of Waikato, Hamilton

**2009:** Casual Research Assistant, Department of Engineering, The University of Waikato, Hamilton. Work involved study of Ti based plasma and high velocity oxygen fuel (HVOF) coatings for the corrosion resistance.

**2007:** Part-Time Lecturer, Department of Trade Engineering, Wintech, Hamilton

**2000 – 2006:** Lecture, Department of Metallurgy and Materials Engineering, University of the Punjab, Lahore, Pakistan.

**1998 – 2000:** Faculty Incharge, Petroman's Girls Computer College, Lahore, Pakistan

**1996 – 1997:** Technical Assistant (Metallurgy), German Technical Cooperation (GTZ), Staff Training Institute (STI), Lahore, Pakistan

### Awards and Distinctions

2016-2017      Research Grant of RS.0.15 million from University of the Punjab for carrying out research on Thin Coatings for High temperature and Biomedical Applications

2010            Internal study award for Journal publications (Jun - Sep'10)

2007            New Zealand Postgraduate Study Award Abroad (NZPSAA) scholarship (study at Nanjing University of Science & Technology, Nanjing, China)

2006-09        The Foundation for Research, Science and Technology (FRST), New Zealand

1995            Roll of Honour in Academics from the Institute of Chemical Engineering & Technology, and Merit Certificate for securing 1<sup>st</sup> Position in B.Sc.(Engg.) from University of the Punjab, Pakistan

1991-95        Merit scholarship during BSc (Engg) studies from University of the Punjab, Pakistan

### Research Interests

- Titanium Powder Metallurgy
- Surface Engineering and Tribology
- Materials Characterisation
- Advanced Materials
- Industrial/Powder Coatings
- Thermally Sprayed Coatings

## Technical Skills

I have an extensive hand on experience of using following Techniques

- Mechanical alloying/Powder Processing Technique
- Optical and Electron Microscopy
- X-rays Diffraction (XRD Analysis)
- Thermal gravimetric analysis (TGA)
- Differential Scanning Calorimetry (DSC)
- Metallography
- Heat Treatments
- Fatigue Testing
- Impact testing
- Harness testing
- Tensile testing
- Tribological Testing (wear, Friction)
- Surface Profilometry

## List of Publications

1. A. Salman, B. Gabbitas and D. Zhang, Titanium based composite coatings deposited by high velocity oxygen fuel and plasma spraying methods. *Key Engineering Materials*, 2013. 551, 127-132
2. A. Salman, B. Gabbitas, P. Cao and D. Zhang, *The performance of thermally sprayed titanium based coatings in molten Al*. *Surface and Coatings Technology*, 2011. **205**(21-22): 5000-5008.
3. A. Salman, Brian Gabbitas and Deliang Zhang, Thermal Shock Properties of Ti(Al,O) and TiAl(O)/Al<sub>2</sub>O<sub>3</sub> composite coatings, *Advanced Materials Research*, 2011, **275**: 47-50.
4. A.Salman, B. Gabbitas and D. Zhang, Thermal shock properties of Ti(Al,O)/Al<sub>2</sub>O<sub>3</sub> composite coatings. In *International Conference on Structural Integrity and Failure*. 2010, Auckland, New Zealand.

5. A. Salman, B. Gabbitas, D Zhang and P Cao, Titanium aluminide/alumina composite powder and thermally sprayed coating for resistance to attack from molten aluminium. In Proc. of SMNZI Materials Conference 2009, 10-11 December 2009, Hamilton, New Zealand.
6. A. Salman, B. Gabbitas, J. Li and D. Zhang, *Tribological properties of thermally sprayed TiAl/Al<sub>2</sub>O<sub>3</sub> composite coating*. Materials Science and Engineering, 2009. **4**: 012006.
7. B. Gabbitas, A. Salman, D. Zhang and P. Cao, *Review of research work on Ti-based composite coatings*. International Journal of Modern Physics B (IJMPB), 2009. **23**(6-7): 1707-1712.
8. A. Salman, B. Gabbitas, P. Cao and D. Zhang, *Tribological properties of Ti(Al,O)/Al<sub>2</sub>O<sub>3</sub> composite coatings by thermal spraying*. International Journal of Modern Physics B (IJMPB), 2009. **23**(6-7): 1407-1412.
9. P. Cao, B. Gabbitas, D. Zhang and A. Salman, *Fabrication of bulk titanium aluminides by thermal spray*. International Journal of Modern Physics B (IJMPB), 2009. **23**(6-7): 1777-1782.
10. A. Salman, A., B. Gabbitas, P. Cao and D. Zhang, D, Tribological properties of Ti (Al,O)/Al<sub>2</sub>O<sub>3</sub> and TiAl/Al<sub>2</sub>O<sub>3</sub> composite coatings by thermal spraying. In *The Fifth International Conference on Advanced Materials and Processing*.2008, Conference held at Harbin, China.
11. A. Salman, B. Gabbitas, D. Zhang, P. Cao and S. Raynova, *Characterisation of Ti(Al,O)/Al<sub>2</sub>O<sub>3</sub> composite powders and thermally sprayed coatings*. Advanced Materials Research, 2007. **29-30**: 135-138.
12. P.Cao, B. Gabbitas and A. Salman, *Consolidation of TiAl powder by thermal spray processes*, Advanced Materials Research, 2007. **29-30**: 159-162.
13. B. Gabbitas, A. Salman, P. Cao, D. Zhang and S. Raynova, Performance of Ti(Al,O)/Al<sub>2</sub>O<sub>3</sub> Composite Coatings in Molten Aluminium. The Japan institute of Metals, 3-7 June 2007. Kyoto, Japan.

### Conference Attended

1. 14th International Symposium on Advanced Materials, 12-16 October 2015, National Centre for Physics, Islamabad, Pakistan
2. International Titanium Powder Processing, Consolidation and Metallurgy Conference, 2-4 December 2013, Hamilton, New Zealand
3. Powder processing, Consolidation and Metallurgy of Titanium, 5-7 December 2011, Brisbane, Australia
4. Structural Integrity and Failure (SIF 2010), 4-7 July 2010, Auckland, New Zealand
5. SMNZI Materials Conference 2009, 10-11 December 2009, Hamilton, New Zealand

6. Microstructure and Performance of Materials (PMPM), 8–9 April 2009, Auckland, New Zealand
7. 4th New Zealand Metals Industry Conference 2008, 30 October 2008, Auckland, New Zealand
8. 5th International Conference on Advanced Materials Processing (ICAMP-5), 2-5 September 2008, Harbin, China
9. 4th International Conference on Advanced Materials Processing (ICAMP-4), December 2006, New Zealand
10. 11th World Conference on Titanium, The Japan institute of Metals, 3-7 June 2007. Kyoto, Japan