

C.V. of

Dr. TAHAR LAOUI

Professor

Department of Mechanical and Nuclear
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University of Sharjah
Sharjah, United Arab Emirates

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1.0 SUMMARY OF EXPERIENCE RECORD

1.1 PERSONAL INFORMATION

Name : Tahar LAOUI
Affiliation : Dept. of Mechanical & Nuclear Engineering, University of Sharjah, Sharjah,
Unite Arab Emirates
Telephone : +971-6 5050 640 (Office), +971-54 398 0273 (Mob)
E-mail : tlaoui@sharjah.ac.ae ; tlaoui3@gmail.com

1.2 EDUCATION

University of Washington, Seattle, Washington, USA,
Ph.D., Metallurgical Engineering, August 1990
Thesis Title: *Non-equilibrium behavior in the aluminum-germanium alloy system*

University of Washington, Seattle, Washington, USA,
M.S., Metallurgical Engineering, August 1986
Thesis Title: *Morphological and crystallographic characterization of boron carbide-aluminum composites*

National Polytechnic Institute of Algiers/University of Science & Technology of Algiers, Algeria
Engineer Degree, Metallurgy, June 1983
Senior Project: *Contribution to the study of superplastic eutectoid zinc-aluminum alloys*

1.3 PROFESSIONAL EXPERIENCE

Professor, Head of Department Sept 2018- present
Department of Mechanical and Nuclear Engineering,
University of Sharjah, Sharjah, UAE

Professor 2012- 2018
Department of Mechanical Engineering, KFUPM,
Dhahran, Saudi Arabia

Visiting Research Professor Sept 2012 – Dec 2012
Department of Mechanical Engineering, MIT,
Cambridge, MA, USA

Associate Professor 2008 - 2011
Department of Mechanical Engineering, KFUPM,
Dhahran, Saudi Arabia

Associate Professor/Senior Lecturer 2002 - 2008
Department of Engineering & Technology
School of Engineering & Built Environment
University of Wolverhampton, U.K.

Post Doctorate/Senior Research Fellow/Lecturer 1991- 2001
Department of Materials & Metallurgical Engineering
Catholic University of Leuven, Belgium

Teaching & Research Assistant Sept. 1986 – Aug. 1990
Department of Materials Science and Engineering
University of Washington, Seattle, WA, USA

1.4 PROFESSIONAL AFFILIATIONS

- Fellow of the Institute of Materials, Minerals & Mining (FIMMM) (UK)
- Member of Materials Research Society (MRS, USA)
- Member of European Membrane Society
- Board Member of the journal ‘Materials Letters’
- Board Member of the journal ‘Membranes’
- Board Member of the journal ‘npj Clean Water’ (Nature Publishing Group)
- Member of Micro & Nanotechnology Network (UK)
- Member of UK Biomaterials Association (UK)
- Member of Society of Manufacturing Engineers (RPA/SME) (USA)

1.5 AWARDS, FELLOWSHIPS AND SCHOLARSHIPS:

- **Best Poster Presentation (1st place-post graduate level)** at the 5th Water Arabia Conference & Exhibition, 17-19 Oct 2017, Khobar, Saudi Arabia. Poster presented by MS student Fatai A. Olabemiwo.
- **Certificate of Appreciation for outstanding Students’ Advising** during KFUPM 8th Students Forum, 4-5 October 2017.
- **Applied Energy 2016 Highly Cited Review Paper**, awarded by Elsevier in 2017, for the paper published in Applied Energy 161, pp 225–255 (2016).
- **Award of Excellence in Research** for the Year 2016-17, awarded by KFUPM
- **Award for the 1st Best Undergraduate Research Course (ME 495)**, Mechanical Engineering Dept., KFUPM, May 2016.
- **Award for the 2nd Best Mechanical Engineering Senior Design Project**, for undergraduate students, Mechanical Engineering Dept., KFUPM, May 2016
- **Award for the 10 Best Poster Presentations** for undergraduate students final year project titled “Design and development of carbon based membranes for

- water purification”, received at the 5th Saudi Students Conference, Riyadh, Saudi Arabia, 28 April – 1 May 2014.
- **Award of Excellence in Research** for the academic Year 2012-13, awarded by KFUPM
 - **Award of Excellence in Academic (Students) Advising** for the academic year 2011-12, awarded by KFUPM
 - **Award for the Best Poster Presentation** received from the European Membrane Society (EMS), Poster presented by my MS student Turki N. Baroud at European Membrane Society – Middle East School of Membrane Technology for Sustainable Water Desalination and Reuse, King Abdullah University of Science and Technology (KAUST), 28 April – 3 May, 2012.
 - **Certificate** from ME Dept., KFUPM, in appreciation for my advising of a UG student team (ME 415: Senior Design Project) who achieved the “Best Senior Design Project” in semester 101 (Sept – Dec 2011)
 - **Grand Prize** in the **Best Poster Competition** at the 2010 ASME society-wide Micro/Nano Technology Forum, ASME 2010 International Mechanical Engineering Congress & Exposition, IMECE2010, Vancouver, British Columbia, Canada, 12-18 November, 2010
 - **Medici Fellowship**, Sept. 2005 - August 2006, <http://www.medici.bham.ac.uk/>
 - **Award of Excellence in Teaching & Learning** for developing a Virtual Learning Tool for a first year Materials Engineering module, awarded by University of Wolverhampton, England, UK, 2004-05
 - **Prestigious Emerald Literati Awards' Outstanding Paper 2004**, for the paper published in Rapid Prototyping Journal, vol.9, No.5, pp.314-326 (2003), <http://www.emeraldinsight.com/literaticlub/winners>
 - **Award for the Best Part** made by Rapid Prototyping Technology: award delivered at the 8th European Conference on Rapid Prototyping held in Paris, May 2000
 - **Travel Grant award** (\$1400) for travel from Fund for Scientific Research-Belgium, April 2000

2.0 TEACHING ACTIVITIES

2.1 COURSES TAUGHT AT DIFFERENT INSTITUTIONS

Undergraduate courses: Materials Science for Mechanical Engineers, Materials Science Lab, Manufacturing Processes, Manufacture with non-Metals, Fundamentals of Materials/Materials Technology, Computer Aided Materials Selection and Design/Processes, Materials and Sustainable Engineering, Materials Processing: Powder Metallurgy, Metallography and Microstructure Development in Steels, Solidification Processing, Physical Metallurgy

Graduate courses: Materials Structure and Defects, Engineering Materials, Rapid Prototyping & Manufacturing Technologies

2.2 TEACHING RELATED CONFERENCE

T. Laoui, J. O'Donoghue

“Development of a virtual learning environment tool for first year students taking Materials Science/Engineering”, Proceedings of the International Conference on Innovation, Good Practice and Research in Engineering Education, 24-26 July 2006, Liverpool, UK, pp. 45-49 (2006).

2.3 ON-LINE COURSE DEVELOPMENT

Development of a virtual learning environment (VLE) tool for first year students taking Materials Science/Technology course. This project's aim was to develop a virtual learning environment and computer aided learning that will enable the students develop their skills and achieve their learning outcomes at a self-determined independent level. The VLE tool was successfully developed covering several phenomena and concepts related to materials science. Two papers (conference paper [C35] and journal paper [J45]) were published from this work.

2.4 TEACHING RELATED WORKSHOPS

- Using WOLF for communicating with students, University of Wolverhampton, September 2003
- Problem based learning approach in teaching, Dept of Materials, Queen Mary University of London, London, November 2005
- Using Blackboard for communicating with students, KFUPM, March 2009, 2013

2.5 SENIOR PROJECT, SUMMER TRAINING AND COOP SUPERVISION:

2.5.1 Supervising Senior Projects:

Dept. of Mechanical Engineering, KFUPM, Saudi Arabia:

Selected Samples of Students who completed their senior design projects

1. Jaffar Al-Nassar, Aoun Al-Nakli, Abdullah Al-Wayel, “Designing and Construction of a glove box with controlled environment for handling nano/fine powder” (081).
2. Abdullah Al-Meshal, Nasser Al-Qahtani, Menwer Al-Shammari, Musad Al-Hudaithi, “Design of a die for manufacturing a micro-tool by powder metallurgy technique” (082).
3. Saleh Al-Dowais, Abdulhamid Al-Dossary, Salem Al-Ruwas, “Design of Tungsten Carbide Based micro tool with nanostructured material”, (091-092).
4. Ali Al-Akwari, Zakariya Al-Jubaili, Hussain Al-Gheryafi, Abdullah Al-Muzen, “Design of tungsten carbide based micro-tool with nanostructured material” (092).
5. Abdullah Al-Ghamdi, Ahmad Al-Zahrani, Nasser Al-Badi, Thamer Al-Mundarej, “Ceramic Membranes for Filtering Applications”, (092).
6. Ibrahim Al-Sufyani, Ahmad Al-Harbi, Mohammad Ba-Jafar, “Die Design calculation and processing of alumina ceramic substrate for ceramic membranes synthesis” (101).
7. Abdulkarim Alshikhjafar, Moayed Al-Musli, Ali Al-Auwa, “Design and processing of a nanostructure WC-based cutting tool”, (101-102).
8. Nayef Al-Harbi, Mohammed Bifari, Yousef Abuzaid, Abdul-Elah Sabbag, “Deposition and characterization of zirconia layer on alumina substrate by using sol-gel technique” (102).
9. Al-Saihati Abdulaziz, Al-Hussain Ahmed, Al-Mahdi Ebrahim, Ameel Habeeb, “Design and manufacturing of hard-metal drill bits for drilling applications” (102-111), May 2012.
10. Jafar Al-Saleh, Mohammad Al-Ramadhan, Alla Al-Hajji Mohammad, Yahya Al-Ashwan, Abdulshahid Al-Rashed “Design and manufacturing of of Flow Loop and Membrane Water Filtration System” (ME 415) (122), May 2013.
11. Zahid Ahmed Uwais, Talha Shafique Ansari, Asad Ahmed Aftab, Dawood Al-Dawood, “Design and development of carbon based membranes for water purification”, May 2014

12. Abdullah Alghanmi, Marwan Khojah, Abdulrahman Shaikh, Abdulraman Alssafar “Characterization and testing of commercial membranes used in Membrane Distillation process for water desalination”, Dec. 2014
13. Gaith Nadhreen, Ahmad Khalil, “Design and Synthesis of Graphene Oxide Membrane on a Polymeric Substrate for Water Filtration Application”, May 2016
14. Abdulrahman Al-Manyá, Jawad Al-Theeb, Hesham Almaleki, Ahmed Baksh, “Wear Testing of SiALON”, May 2016
15. Mirza Riyaz Akhter, Hasan Mohammad Siddiqui, Shariful Islam Bhuiyan “Design and Optimization of Graphene Transfer on Silicon Dioxide Substrate”, ME 412 - May 2017
16. ALGHAMDI ABDULAZIZ, ALGIBREEN ABDULAZIZ, ALMOHAMMDI RAYAN, ALMUTAIRI FARAS, ALTURKISTANI ABDULLAH, “Design and fabrication of a system for graphene transfer”, ME416 - May 2018
17. Meshal Al-Qahtani, Abdullah Al-Khalidi, Abdullah Al-Haddad, “Design of a bench scale cross flow membrane unit for oil-water separation”, ME414

Selected Samples of Students who completed coop training (ME351 & ME352):

1. Mamdouh Al-Harbi, “Inspection and boiler’s economizer tubes failure case studies”, (081), January 2009.
2. Majed Almazmoumi, “Failure of Main Seawater Cooling pump in a MSF Desalination Plant”, (082), May 2009.
3. Abdulaziz Aziz, “Steam Turbine Failure”, (082), May 2009.
4. Mufferreh Al-Mahan, “Assessment of a well production using a logging tool” (091), January 2010.
5. Mohammed Al-Kalbani, “Design of a Pump & Oil Expansion Vessel” (092), May 2010.
6. Obaidallah Al-Munteshari, “Shaft and Flanges Loading and Thermal Expansion” (101), January 2012
7. Mohammed Bifari, “Pipeline inspection tests and pipeline design”, (101), January 2012
8. Saleh Al Qahtani, “Overpressurised tanks”, (111), January 2012

9. Muad Eshaq Al-Farsi, “OFFSHORE PROJECTS DESIGNS”, (112), May 2012
10. Abdulaziz Ababtain , “Gas Turbine Outages and Repair Jobs”, (112), May 2012
11. Husam Algamdi, “Piping around heat exchanger and stress analysis”, (122), May 2013
12. Talal Saad Abdulkarim, “Failure investigation in multistage compressor and tube boiler”, performed at Saudi Aramco Mobil refinery ‘Samref’”, Yanbu, (122-123), defended Sept 2013.
13. Abdullah Hamad Alkanhel, “Jazan-Abha new pipeline project”, performed at Saudi Aramco, Sept. 2014.
14. Hani Al-Mudaini, “Jazan-Abha new pipeline project”, performed at Schlumberger LTD, Sept. 2015.
15. Abdulbagi Alanazi, “Armored Vehicles & Heavy Equipment Factory”, performed at AVF, Dammam, Feb. 2016.
16. Hussain Ali Al-Nashri, “Phosphate Production: Plants and Equipment”, performed at Maaden Phosphate Company, Ras Al-Khair Industrial City, Oct. 2016.
17. Mohammed Al-Rahmah, “Halliburton Energy Services”, performed at Halliburton, Dhahran, October 2017.

2.5.1 Supervising Senior Projects:

School of Engineering & Built Environment, University of Wolverhampton, UK:

I supervised over 15 Final Year projects during the period 2002-2007.

2.6 STUDENT ADVISING

On average, I advise 25 students per semester for the past several years.

2.7 SHORT COURSES

2.7.1 Short Courses Delivery

- Non Destructive Testing short course for ARAMCO Co., May 2012, Feb 2013, and March 2014.
- Design for Manufacturing (DfM), delivered 'Engineering Materials & Composites', 10 November 2010, Tetrapak, Bologna, Italy.
- Rapid prototyping and rapid manufacturing, School of Applied Sciences, Cranfield University, Cranfield, Bedfordshire, UK, November 2007.
- Selective Laser Sintering as a Rapid Manufacturing technology, organized by Rapid Prototyping & Manufacturing Association, 25 September 2003, University of Liverpool, UK.

2.7.2 Short Course attendance

- Pre-treatment Membrane Fouling & Scaling, organized by SWCC and EDS (European Desalination Society), 13-16 February 2011, Jeddah, Saudi Arabia
- Research Leadership, organized by Deanship of Scientific Research-KFUPM, March 2010
- Using Blackboard for communicating with students, KFUPM, March 2009, 2013
- Problem based learning approach in teaching, Dept of Materials, Queen Mary University of London, London, November 2005
- Using WOLF for communicating with students, University of Wolverhampton, September 2003
- Philips/Gatan Electron Energy Loss Spectroscopy, Philips Application Lab, 21-24 May 1991, Eindhoven, Holland

2.8 NEW COURSES DEVELOPED:

1. Computer Aided Materials Selection and Design/Processes (using Cambridge Engineering Software) - Univ. of Wolverhampton, UK.
2. Manufacture with non-Metals (polymers, ceramics, composites) - Univ. of Wolverhampton, UK.
3. From concept to product - Univ. of Wolverhampton, UK.
4. Rapid Prototyping & Manufacturing Technologies (Graduate course) -Univ. of Wolverhampton, UK.
5. Engineering Materials (jointly developed course with Dr K. Kibble) (Graduate course) -Univ. of Wolverhampton, UK.

6. Engineering Nanomaterials (Graduate course): developed the syllabus of this course for a new Master of Materials Science Degree at Mechanical Engineering Dept, KFUPM - started in September 2012.
7. Materials Characterization (Graduate course): developed the syllabus of this course for a new Master of Materials Science Degree at Mechanical Engineering Dept, KFUPM - started in September 2012.

2.9 TEACHING LAB DEVELOPMENT

- Powder Metallurgy Lab at KFUPM: for Manufacturing Processes lab related to powder compaction & sintering, undergraduate and graduate courses in ME Dept.
- Nanotechnology Lab at KFUPM: for the relevant courses in the Master of Materials Science at Mechanical Engineering Dept., Sept. 2012-Aug 2018.
- Membrane Lab at KFUPM: for development and testing of inorganic and mixed matrix membranes for water treatment and water desalination as well as gas separation applications, for undergraduate and graduate courses in ME Dept., Sept. 2016-Aug 2018

3.0 MASTER AND DOCTORAL STUDENT SUPERVISIONS

3.1 THESIS/DISSERTATION SUPERVISION

3.1.1 Advisor or Co-Advisor

PhD Dissertation:

1. Paul A.Knox, “Development of high performance tribological coatings for deposition onto hip joint prostheses”, PhD Dissertation, Dept. of Engineering & Technology, Univ. of Wolverhampton, UK, 1st Viva Examination held on May 2008, (2004-2008).
2. Stephen A.Hewitt, “Thermally controlled powder synthesis, and consolidation of nanocomposite WC-Co powders”, PhD Dissertation, Dept. of Engineering & Technology, Univ. of Wolverhampton, UK, (2004-2008).
3. Ahmed Ibrahim, “Synthesis and characterization of graphene on copper substrate: effect of hydrogen and copper surface morphology on graphene characteristics”, PhD Dissertation, Mechanical Engineering Dept at KFUPM, defended 13 May 2015.
4. Ihsan Ullah, “Synthesis of novel carbon nanotube membranes for applications in water treatment”, PhD Dissertation at Chemical Engineering Dept, KFUPM, defended 14 Dec. 2015.
5. Feras Mohammad Abdalla Kafiah, “Graphene Transfer onto PP, PES and PVDF polymeric substrates: Development of water purification membranes”, PhD Dissertation at Mechanical Engineering Dept, KFUPM, defended 14 Dec. 2015.
5. Bilal Anjum Ahmed, “Development of calcium sialons along the alpha/(alpha+beta) phase boundary using nano-size oxi-nitride precursors and spark plasma sintering technique”, PhD Dissertation at Mechanical Engineering Dept, KFUPM, defended 18 April 2018.

MS Thesis:

6. Two MS students from Belgium, via the EU-Socrates-Erasmus Exchange Programme, who completed their MS Project at Univ. of Wolverhampton, June 2003.
7. Sharafudeen Mohamed Saghir, “Design of Metal-on-Metal Hip Arthroplasty”, Univ. of Wolverhampton, January 2005.
8. Raghu Shashank Vinukollu, “Modeling & Fluid Dynamics of the Trabecular Mechwork in the Human Eye”, Univ. of Wolverhampton, October 2005.

9. Charalampos Katsoulis, "An Investigation into Alternative Binders to Cobalt for Nanostructured Hardmetal Powders", Univ. of Wolverhampton, May 2006.
10. Hussain Ismaila Haruna, "Electrophoretic Deposition (EPD) of bioactive glass and hydroxyapatite on titanium and stainless steel", Univ. of Wolverhampton, September 2006.
11. Ameer El-Shikh, "Grain Size Calculation of Nanostructured Hardmetals by X-ray Diffraction Technique", Univ. of Wolverhampton, September 2006.
12. Gurpreet Singh Purba, "Calculation of the mechanical properties (Young's modulus and shear modulus) of single walled carbon nanotube and single walled carbon nanotube based composite", Univ. of Wolverhampton, January 2007.
13. Wen Feng Chen, "Development of an Information System for Rapid Manufacturing", Univ. of Wolverhampton, October 2007.
14. Ying Zhu, "Development of an Information Database for Rapid Manufacturing Technology", Univ. of Wolverhampton, October 2007.
15. Mirza Aqeel Baig, "Development of Multilayered Gradient Ceramic Membrane", Mechanical Engineering Dept. at KFUPM, April 2011.
16. Turki Nabih Baroud, "Synthesis and Characterization of Thin MFI-type zeolite Layer on Porous Alumina Substrate", Mechanical Engineering Dept. at KFUPM, May 2012.
17. Raja Muhammad Owais Khan, "Processing and Characterization of β -SiAlON Ceramic Nano-Composites Reinforced with WC Nanoparticles for Cutting Tool and Wear Resistance Applications", Mechanical Engineering Dept. at KFUPM, 16 Dec. 2015.
18. Moath Al-Malki, "Development of α -SIALON Ceramic Based Composite Reinforced with SiC nanoparticles for Drilling and Cutting tools Applications", Mechanical Engineering Dept. at KFUPM, 7 Dec. 2015.
19. Khurram Mirza, "Development of Advanced Carbon Nanotubes-Alumina Composite Membranes for Heavy Metals Removal", Mechanical Engineering Dept. at KFUPM, 1 Sept 2015 - 4 May 2017.
20. Noman Naseeb, "Development and Characterization of Electrospun Polyacrylonitrile-based Nanocomposite Membranes for Oil-Water Separation", Mechanical Engineering Dept. at KFUPM, 1 Jan 2016 - 25 Dec 2017.

21. Omar Wagas Saadi, "Development and performance evaluation of CAU-1 metal-organic framework/polyetherimide mixed matrix membrane for gas separation", Mechanical Engineering Dept. at KFUPM, 1 Jan 2016 - 27 Dec 2017.
22. Ahmed Abdelaal, "Enhanced CVD-Grown Graphene Transfer for Solar Cell Application", Mechanical Engineering Dept. at KFUPM, 1 Sep 2016 – 9 May 2018.

3.1.2 Committee Member of the Supervisory Team

Ph.D. Dissertation:

1. Rebiha Labbani, "Contribution to the study of the interaction between silicon and chromium phosphorous antimony and oxygen", PhD Dissertation, Dept. of Physics, Univ. of Constantine, Algeria, May 2003.
2. Wei Jiang, "3D FE simulation of the welding process to optimise residual stress profiles in complex geometries", PhD Dissertation, Dept. of Engineering & Technology, Univ. of Wolverhampton, UK, May 2006.
3. Jun Fen Shi, "Finite element analysis of total knee replacement: considering gait cycle load and malalignment", PhD Dissertation, Dept. of Engineering & Technology, Univ. of Wolverhampton, UK, July 2007.
4. Muhammed E.H.Khan, "Development of an efficient method for chrome plating of a variety of metallic substrates with special reference to Aluminum and its alloys, PhD Dissertation, Dept. Engineering & Technology, Univ. of Wolverhampton, UK (2004-08).
5. Issam Thaher Amr, "Design and Fabrication of Orifice chemical vapor deposition (O-CVD) reactor for production of carbon nanotubes and their applications in styrene polymerization", PhD Dissertation, Chemical Engineering Dept. at KFUPM, Jan 2011.
6. Asif Matin, "Enhancing the Biofouling Resistance of RO Membranes by the Deposition of Amphiphilic Copolymer Films and the Incorporation of Antimicrobial Nanomaterials", PhD Dissertation, Mechanical Engineering Dept at KFUPM, Feb 2012.
7. Mousab Salah Eldeen Mirghani, "Synthesis of titania nanoparticles and its application for photocatalytic degradation of pollutants from aqueous solutions", PhD Dissertation, Chemical Engineering Dept. at KFUPM, May 2012.
8. Qadi Munir, "Development and characterization of epoxy-clay nanocomposites", PhD Dissertation, Mechanical Engineering Dept at KFUPM, May 2012.

9. Tasleem Babatunde Asafa, "Development of ultrathin polycrystalline silicon germanium films as structural layers for applications in nanoelectromechanical systems (NEMS)", PhD Dissertation, Mechanical Engineering Dept at KFUPM, May 2013.
10. Hafiz Zahid Shafi, "Improving Biofouling Resistance of Commercial RO Membranes Via Surface Modification", PhD at ME Dept., KFUPM, March 2015
11. Zafar Iqbal, "Development of Tungsten-Rhenium Base Tool for Friction Stir Welding of Steel", PhD at ME Dept., KFUPM, May 2016
12. Khwaja Mohammad, "Development of two-phase reinforced alumina nanocomposites for cutting tool applications", PhD at ME Dept., KFUPM, 8 Jan 2017
13. Muhammed Jamiu Suleiman Adinoyi, "Fatigue behavior of metallic alloys with different microstructures", PhD at ME Dept., KFUPM, 28 Dec 2017

MS Thesis:

1. M. Boucheur, "Discontinuous Precipitation in Cu-15wt%In Alloy", University of Constantine, Algeria, 1994.
2. Nouari Saheb, "Study of the precipitates in Aged Al-Mg Alloys", University of Constantine, Algeria, 1994.
3. Tom Smolderen, "Selective laser sintering of WC-Co hardmetal", Industrial Institute ECAM (haute Ecole Leonard de Vince), Brussels, 1998.
4. Philip Peeters, "Selective Laser Sintering of cermets", University of Leuven (K.U. Leuven, Belgium), 1998.
5. Philip Hespel, "Process optimization by selective laser sintering of hardmetal powders", University of Leuven (K.U. Leuven), 1999.
6. Risko Artanto, "Load-profiling of silicon carbide", Univ. of Wolverhampton, UK, October, 2007.
7. David Atkinson, "Global new product introduction and development in the automotive sector, M.Phil Thesis, Dept. of Engineering & Technology, Univ. of Wolverhampton, UK, 2007.
8. Samer Mohammed Hakami, "Production of Carbon Nanotubes (CNTS) using Floating Catalyst Chemical Vaport Deposition (FC-CVD) Reactor for

- Microbiological Applications”, (Muataz student) MS Thesis, Chemical Engineering Department at KFUPM, May 2011.
9. Ahmad Akanbi Adewunmi, “Effect of functionalized Carbon Nanotubes with surfactants on the thermal and mechanical properties of polyethylene nanocomposites”, (Muataz Atieh student), MS Thesis, Chemical Engineering Department at KFUPM, May 2011.
 10. Mohammed Riyazuddin Farooqui “Influence of carbon nanotubes (CNTs) on the mechanical properties and processibility of polyethylene terephthalate (PET)/CNT nanocomposite fibers”, MS Thesis, Mechanical Engineering Department at KFUPM, March 2012.
 11. Syed Zabiullah, “Wear behavior of magnesium based nanocomposites”, MS Thesis, Mechanical Engineering Department at KFUPM, Dec 2012
 12. Shahnawaz Alam, “AlCrN hard coating deposited by magnetron sputtering: scratch, wear and creep behavior”, MS Thesis, Mechanical Engineering Department at KFUPM, April 2013
 13. Nasser H. Al Hammad, “Design and Optimization of Multi Walled CNT using CVD Reactor”, MS Thesis, Chemical Engineering Department, KFUPM, March 2014
 14. Atef Al-Zahrani, “Synthesis and characterization of Al-based nanocomposites fabricated by Spark Plasma Sintering”, MS Thesis, Mechanical Engineering Department, KFUPM, Sept 2014
 15. Dahiru Umar Lawal, “Desalination using air gap membrane distillation”, MS Thesis, Mechanical Engineering Department, KFUPM, Nov 2014
 16. Junaid Ahmed, “Investigating the role of silicon on the electrochemical properties of powder metallurgy stainless steels”, MS Thesis, Mechanical Engineering Department, KFUPM, 17 Dec. 2015
 17. Ogunlakin Olekan, “Development of a magnesium based hybrid nanocomposite”, MS Thesis, Mechanical Engineering Department, KFUPM, 17 April 2016
 18. Lemboye Kareem Taiwo, “Developing a ceramic composite for applications in power electronic substrates”, MS Thesis, Mechanical Engineering Department, KFUPM, 23 April 2016
 19. Ibrahim Momohjimoh, “Electrical and thermal behavior of alumina-based nanocomposites”, MS Thesis, Mechanical Engineering Department, KFUPM, 17 May 2016

20. Adedayo Sheriff Adeniyi, “Spark plasma sintering of iron based metallic glass alloy”, MS Thesis, Mechanical Engineering Department, KFUPM, 4 Jan 2017
21. Fatai Abidemi Olabemiwo, “The potential capacity of polyelectrolyte coated carbon fly ash in removing cadmium from contaminated water”, MS Thesis, Earth Sciences Department, KFUPM, 26 April 2017
22. Omer Al Noor Osman, “Graphene Oxide based Membrane for Water Filtration”, Mechanical Engineering Dept. at KFUPM, 26 April 2017.
23. Muhammad Umar Azam, “Development and Characterization of Ultra High Molecular Weight Polyethylene (UHMWPE)-based Hybrid Nanocomposite Coating for Bearing Applications under Water Lubrication”, Mechanical Engineering Department, KFUPM, May 2017.
24. Saleh Abdullah Al Wohaibi, “Investigation of Tribological Properties of Micro/Nano sized WC-Co Hardmetals Prepared by Spark Plasma Sintering Process at Elevated Temperatures”, Mechanical Engineering Department, KFUPM, May 2017.
25. Baseel Alaa Awad Taha Abdelkader, “Development of Graphene Oxide Based Membrane as a Pretreatment Step in Thermal Desalination”, Mechanical Engineering Department, KFUPM, May 2017.
26. Almigdad Babiker Hamid Ibrahim, “Developing Friction Stir Diffusion Cladding (FSDC) Process”, Mechanical Engineering Department, KFUPM, May 2017.
27. Zahid Ahmed Uwais, “Tribological Characterization of a Novel UHMWPE Hybrid Nanocomposite Coating for Biomedical Applications”, MS Thesis, Mechanical Engineering Department, KFUPM, 18 December 2017
28. Ghazi Zulhami Herry, “Absorber material for solar thermal power plant”, MS Thesis, Mechanical Engineering Department, KFUPM, 26 December 2017
29. Taha Wagar, “Design and Development of Ceramic-based Composites for Cutting Tool Inserts”, Mechanical Engineering Dept. at KFUPM, April 2018.

3.1.3 Membership of External Examination Committee:

- External Examiner for a PhD defense, Universitat Politecnica de Catalunya, (Barcelona, Spain, July 2009)
- External Examiner and Chair of the Examination Team for a PhD viva examination, University of Northumbria (Newcastle Upon Tyne, UK, April 2007)
- Member of the Examination Committee for MSc dissertations/presentations, University of Wolverhampton, UK, 2004-06

- Internal Examiner for three PhD viva examinations, University of Wolverhampton, UK, amongst them, I acted as a Chair for two of these examinations, 2003-2007
- External Examiner for a PhD viva examination, University of Birmingham, (Birmingham, UK, June 2005)
- External Examiner for a Master of Research thesis viva examination, University of Birmingham, (Birmingham, UK, May, 2006
- Member of the Examination Committee for a PhD examination, University of Constantine (Constantine, Algeria, 2003)
- Member of the Examination Committee for a PhD examination, University of Constantine (Constantine, Algeria, 1995)
- External Examiner for several Industrial Engineer thesis, Industrial Institute ECAM (Haute Ecole Léonard de Vince), Brussels, 1998 and 1999

4.0 RESEARCH ACTIVITIES

4.1 RESEARCH AREAS OF INTEREST

- Membranes for water treatment and water desalination applications
- Nanotechnology: processing of advanced materials/nanomaterials/nanocomposites by Powder Metallurgy/Mechanical Alloying technique
- Structure-property-processing relationships in composite materials
- Advanced materials for cutting/drilling applications
- Rapid Prototyping & Rapid Manufacturing technologies

4.2 RESEARCH PROJECTS

Research Projects Completed (2000 – 2018):

United Kingdom

1. Tahar Laoui (**PI**), *Advanced dental implants manufactured by Selective Laser Sintering (SLS) process*, funded by EU (INTAS), Project No. 99-1559, 2000-2002
2. Tahar Laoui (**PI**), *Development of a Virtual Learning Environment (VLE) for 1st year students taking Materials Science course*, funded by UK Center for Materials Education (UKCME), Liverpool, UK, 2004.
3. Tahar Laoui (**PI**), *Implementation of Problem Based Learning (PBL) approach in Materials related course*, by UK Center for Materials Education (UKCME), Liverpool, UK, 2004.
4. Tahar Laoui (**PI**), *Knowledge Transfer Partnership project with Aldridge Piling Equipment Co. (UK)*, funded by UK Government, 2007.
5. Tahar Laoui (**PI**), *Dental implants: patent application, market research & biological assessment*, funded by Mercia Spinner - UK, 2008.
6. Tahar Laoui (**PI**), *Industrial Case Award Studentship – Development of high performance tribological coatings for deposition onto hip joint prostheses*, funded by Engineering & Physical Sciences Research Council (EPSRC) - UK, 2006-2008.

Saudi Arabia (KFUPM)

7. Tahar Laoui (**CI**), *Exploring a manufacturing route to produce WC-based micro-tool with nanostructured material*, SABIC Project, funded by Deanship of Scientific Research, DSR (KFUPM), 2009-2010.
8. Tahar Laoui (**PI**), *“Development of high performance advanced WC-based hardmetal nanocomposites for cutting/drilling applications”*, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 08-ADV-64, 2010-2012.
9. Tahar Laoui (**PI**), *“Advanced bio-inert ceramic filter materials with graded macro/micro/nanoporous structure”*, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 08-ADV-70, 2010-2012.
10. Tahar Laoui (**CI**), *“Development of Aluminum Based Nanocomposites through Power Metallurgy and Novel Sintering Technologies for Structural and Tribological Applications”*, funded by King Abdulaziz City for Science and Technology (KACST) under the Annual Program Grants, Project No. ARP 28-122, 2010-2012.

11. Tahar Laoui (**CI**), “*Development of High Performance CNTs and SiC Reinforced Metal Matrix Nanocomposites for Pistons Applications*”, funded by KFUPM-Center of Excellence in Nanotechnology (CENT), Project No. CENT NT-04-2008, 2010-2012
12. Tahar Laoui (**CI**), “*Effect of Radiation Vulcanization and Conventional Vulcanization on the Mechanical and Physical Properties of Natural Rubber/Carbon Nanotubes Nanocomposites*”, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 09-ADV789-04, 2011-2013.
13. Tahar Laoui (**CI**), *Experimental Investigation of Heat Transfer Characterization for CNT-Nanofluid in Heat Exchangers*, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 09-NAN758-04, 2012-2014
14. Tahar Laoui (**CI**), *Development of Nitrogen Modified CNTs as Pt-Free Catalyst for Fuel Cell Applications*, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 10-ENE1375-04, 2012-2014
15. Tahar Laoui (**CI**), *Multi-Scale Design of Next Generation Reverse Osmosis (RO) Membranes for Seawater Desalination*, Joint Research Collaboration between KFUPM and MIT (USA) - Mechanical Engineering Departments, Project No. CW-5, funded by KFUPM, 2009-2014.
16. Tahar Laoui (**CI**), *Processing and characterization of SiAlON-based ceramic nanocomposites reinforced with SiC and WC nanoparticles for cutting tool and wear resistance applications*, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 12-ADV2411-04, Sept 2013 – Aug 2016.
17. Tahar Laoui (**PI**), “*Novel Nanostructured Membranes for Seawater Desalination*”, Joint Research Collaboration between KFUPM and MIT (USA) - Mechanical Engineering Departments, Project No. R10-CW-09, funded by KFUPM-MIT Collaboration Center, Sept 2009 – Aug 2016.
18. Tahar Laoui (**PI**), “*Development of ceramic-based membranes reinforced with bare/modified carbon nanotubes for water treatment applications*”, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 13-ADV2184-04, Sept 2015 – Feb 2018, Budget: 1,923,859 SAR
19. Tahar Laoui (**PI**), “*Synthesis and Characterization of Micro and Nano Carbon Materials Coated with Polyelectrolyte for Removal of Heavy Metals from Water*”, funded by National Science, Technology and Innovation Plan (NSTIP)-KACST, Project No. 13-ADV161-04, March 2014 – Aug 2017, Budget: 1,814,800 SAR

20. Tahar Laoui (**PI**), “*Removal of heavy metals using novel nanocatalyst coated on carbon nanotubes surface*”, funded by Deanship of Scientific Research, DSR (KFUPM), March 2015 – Feb 2018, Budget: 300,000 SAR
21. Tahar Laoui (**PI**), “*Investigation of tribological properties of micro/nanosized WC-Co hardmetals prepared by Spark Plasma Sintering process at elevated temperatures*”, funded by Deanship of Scientific Research, DSR (KFUPM), Sept 2015 – Feb 2018, Budget: 299,800 SAR
22. Tahar Laoui (**PI**), “*Development of electrospun nanofiber membranes for oil water separation*”, funded by Deanship of Scientific Research, DSR (KFUPM), April 2016 – August 2018, Budget: 284,300 SAR

Note: **PI:** Principal Investigator, **CI:** Co-Investigator

4.3 LIST OF PUBLICATIONS

4.3.1 Journal papers published/accepted for publication

- [J1] **T. Laoui**, S.A. Jones, R.D. Shull, M.J. Kaufman, “*Microstructural studies of Ti-Al alloys in the vicinity of the eutectoid reaction*”, Journal of Metals, vol. 39, No 10, pp: A5, (1987).
- [J2] **T. Laoui**, M.J. Kaufman, “*Controlled preparation of metastable crystalline phases in vapor-deposited Al-Ge alloys*”, Journal of Metals, vol. 40, No 7, pp: A43, (1988).
- [J3] **T. Laoui**, M.J. Kaufman, “*Non-Equilibrium Behavior in the Al-Ge Alloy System: Insights into the Metastable Phase Diagram*”, Metallurgical Transactions 22A, pp. 2141-2152 (1991).
- [J4] **T. Laoui**, “*Analytical Electron Microscopy (AEM) of Core/Rim Structure in Titanium Carbonitride*”, Metal Powder Report, vol. 47, Issue 10, p. 51 (1992).
- [J5] **T. Laoui**, H. Zou, O. van der Biest, “*Analytical Electron Microscopy of the Core/Rim Structure in Titanium Carbonitride Cermets*”, Int. Journal of Refractory Metals & Hard Materials 11, pp. 207-212 (1992).
- [J6] J. Vleugels, **T. Laoui**, R. Wouters, O. van der Biest, “*Characterization of Sialon Ceramics by EPMA and TEM*”, Inst. Phys. Confer. Ser. No. 130: Chapter 3, ed. P.B. Kenway et al., IOP Publishing Ltd., England, pp. 307-310 (1993).
- [J7] **T. Laoui**, M.J. Kaufman, “*Metastable Phase Equilibria in Faceted-Non Faceted Systems*”, Scripta Metallurgica et Materialia vol. 30, no. 12, pp. 1563-1567 (1994).
- [J8] O. van der Biest, **T. Laoui**, J. Vleugels, K. Sumanasiri, H. Mohrbacher, B. Blanpain, J.P. Celis, “*Micro-Raman Spectroscopy for Phase Identification and Stress Measurements in Advanced Ceramics*”, NATO ASI Series, ed. K.G. Nickel, Kluwer Pub., vol. 267, pp. 385-397 (1994).
- [J9] **T. Laoui**, O. van der Biest, “*Study of Grain Boundary Phase in Silicon Nitride Materials by Raman Spectroscopy*”, Key Engineering Materials vol. 89, pp. 495-500 (1994).
- [J10] J. Vleugels, **T. Laoui**, K. Vercaemmen, J.P. Celis, O. van der Biest, “*Chemical Interaction Between a Sialon Cutting Tool and Iron-Based Alloys*”, Materials Science & Engineering 187, pp. 177-182 (1994).
- [J11] **T. Laoui**, J. Vleugels, O. van der Biest, “*Effect of Secondary Boundary Phase on Sialon/Steel Chemical Interaction*”, Materials Science & Engineering Letters 183, pp. L19-L21 (1994).

- [J12] **T. Laoui**, O. van der Biest, “*Effect of TiC Addition on the Microstructure and Properties of Ti(C,N)-WC-Co-Ni Cermet*”, Journal of Materials Science Letters 13, pp. 1530-1532 (1994).
- [J13] Y. Zhou, J. Vleugels, **T. Laoui**, O. van der Biest, “*Toughening of Sol-Gel Derived Mullite Matrix by Al₂O₃ Platelets*”, Journal of Materials Science Letters 13, pp. 1089-1091 (1994).
- [J14] Y. Zhou, J. Vleugels, **T. Laoui**, O. van der Biest, “*Toughening of X-Sialon with Al₂O₃ Platelets*”, Journal of the European Ceramic Society 15, pp. 297-305 (1995).
- [J15] Y. Zhou, J. Vleugels, **T. Laoui**, P. Ratchev, O. van der Biest, “*Preparation and Properties of X-Sialon*”, Journal of Materials Science 30, pp. 4584-4590 (1995).
- [J16] N. Saheb, Z. Boumerzoug, D. Hamana, **T. Laoui**, O. van der Biest, “*Different Types of Discontinuous Precipitation in Cu-15wt%In Alloy*”, Scripta Metallurgica et Materialia vol. 32, No. 9, pp. 1453-1458 (1995).
- [J17] M. Boucheur, D. Hamana, **T. Laoui**, “*G.P. Zones and Precipitation Morphology in Aged Al-Mg Alloys*”, Philosophical Magazine A vol. 73, No. 6, pp.1733-1740 (1996).
- [J18] P. Campbell, **T. Laoui**, J.P. Celis, O. van der Biest, “*The Influence of Intergranular Phases on the Tribological Performance of Sialons*”, Materials Science & Engineering A207, pp. 72-86 (1996).
- [J19] J.P. Kruth, P. Peeters, T. Smolderen, J. Bonse, **T. Laoui**, L. Froyen, “*Comparison of CO₂ and Nd-YAG lasers for use with Selective Laser Sintering of Steel-Copper powders*”, International Journal of CAD/CAM and Computer Graphics, vol. 13, Effect of Mechanical Alloying on Selective Laser Sintering of WC-9Co powder”, Powder Metallurgy vol. 42, No. 3, pp. 203-205 (1999).
- [J20] N.K. Tolochko, Y.V. Khlopkov, S.E. Mozzharov, **T. Laoui**, V.I. Titov, M.B. Ignatiev, “*Measurement of Powder’s Absorptance with Nd:YAG and CO₂ Lasers*”, Science of Sintering 31 (3), pp. 187-194 (1999).
- [J21]. N.K. Tolochko, V.B. Michailov, **T. Laoui**, L. Froyen, A.Ph. Ilyuschenko, S. Steinhäuser, “*Laser sintering of single-component metal and two-component metal/ceramic powders*”, Science of Sintering 32 (2), pp. 53-59 (2000).
- [J22] N.K. Tolochko, **T. Laoui**, Y.V. Khlopkov, S.E. Mozzharov, V.I. Titov, M.B. Ignatiev, “*Absorptance of Powder Materials Suitable for Laser Sintering*”, Rapid Prototyping Journal vol. 6, No. 3, pp. 155-160 (2000).

- [J23] N.K. Tolochko, I.A. Yadroitsev, A.Ph. Ilyuschenko, V.I. Titov, M.B. Ignatiev, **T. Laoui**, L. Froyen “*About possibilities of principle to fabricate components for micro-mechanics by laser sintering of metal micro- and nanopowders*”, Nanostructural materials: fabrication and properties, ed., NASB, Minsk (Belarus), pp. 29-31 (2000).
- [J24] **T. Laoui**, X. Wang, J.P. Kruth, L. Froyen, “*Modeling of laser penetration in a powder bed during Selective Laser Sintering of metal powders*”, International Journal of CAD/CAM and Computer Graphics, Vol.15, No.2-4, pp. 185-198 (2000).
- [J25] N.K. Tolochko, Yu.Shienok, **T. Laoui**, L. Froyen, M.B. Ignatiev, V.I. Titov, Y. Shienok, “*Graded structures developed by laser processing of powder materials*” In: Functional Gradient Materials and Surface Layers Prepared by Fine Particles Technology, NATO ASI Series II, vol. 16, M.I. Baraton and I. Uvarova (eds.), Kluwer Acad. Pub., pp. 127-134 (2001).
- [J26] **T. Laoui**, X. Wang, T.H.C. Childs, J.P. Kruth, L. Froyen, “*Laser penetration in a powder bed during Selective Laser Sintering of metal powders: simulations versus experiments*”, Int. J. of Eng Simulation, vol.2, No.1, pp. 10-16 (2001).
- [J27] J.P. Kruth, **T. Laoui**, “*Selective Laser Sintering: State-of-the-art*” International Journal of Electrical Machining, No. 6, pp. 7-17 (2001).
- [J28] N. Saheb, **T. Laoui**, A.R. Daud, M. Harun, S. Radiman, R. Yahaya, “*Influence of Ti addition on wear properties of Al-Si eutectic alloys*” Wear 249, pp. 656-662 (2001).
- [J29] N. Saheb, T. Laoui, A.R. Daud, R. Yahaya, S. Radiman, “*Microstructure and hardness behaviour of Al-Si alloys*” Philosophical Magazine A, Vol. 82, No. 4, pp. 803-814 (2002).
- [J30] X. Wang, **T. Laoui**, J. Bonse, J.P. Kruth, B. Lauwers, L. Froyen, “*Direct selective laser sintering of hard metal powders: experimental study and simulation*”, International Journal of Advanced Manufacturing Technology, Vol. 19, No.5, pp. 351-357 (2002).
- [J31] N.K. Tolochko, V.V.Savich, **T. Laoui**, L. Froyen, G. Onofrio, E. Signorelli, V.I. Titov, “*Dental root implants produced by combined selective laser sintering/melting of titanium powders*” Proc. Inst. Mech. Eng., Part L, Journal of Materials: Design and Applications, Vol. 216, pp. 267-270 (2002).
- [J32] R. Labbani, R. Halimi, **T. Laoui**, A. Vantomme, B. Pipeleers, G. Roebben, “*Characterization of Si(111) crystals implanted with Sb⁺ ions and annealed by rapid thermal processing*”, Materials Science & Engineering B 102, pp. 390-397 (2003).

- [J33] N.K. Tolochko, S. Mozzharov, **T. Laoui**, L. Froyen, “*Selective laser sintering of single- and two-component metal powders*” Rapid Prototyping Journal, vol. 9, No. 2, pp. 68-78 (2003).
- [J34] A.V. Gusarov, **T. Laoui**, L. Froyen, V.I. Titov, “*Contact thermal conductivity of a powder bed in selective laser sintering*”, International Journal of Heat and Mass Transfer, vol 46/issue 6, pp. 1103-1109 (2003).
- [J35] K.M. Shorowordi, **T. Laoui**, A.S.M.A. Haseeb, J.P. Celis, L. Froyen, “*Microstructure and interface characteristics of B₄C, SiC and Al₂O₃ reinforced Al matrix composites: a comparative study*”, Journal of Materials Processing Technology, Vol. 142, Issue 3, pp. 738-743 (2003).
- [J36] J.P. Kruth, X. Wang, **T. Laoui**, L. Froyen, “*Lasers and materials in selective laser sintering*”, Assembly Automation, vol. 23, No. 4, pp. 357-371 (2003).
- [J37] N.K.Tolochko, M.K. Arshinov, A,V,Gusarov, V.I. Titov, **T.Laoui**, and L. Froyen, “*Mechanims of selective laser sintering and heat transfer in Ti powder*”, Rapid Prototyping Journal, vol. 9, No. 5, pp. 314-326.(2003). ***This paper won the prestigious Emerald Literati Awards’ Outstanding Paper 2004.***
- [J38] N.K. Tolochko, S.E. Mozzharov, I.A. Yadroitsev, **T. Laoui**, L. Froyen, V.I. Titov, M.B. Ignatiev, “*Balling process during selective laser treatment of powders*” Rapid Prototyping Journal, vol. 10, No. 2, pp. 78-87 (2004).
- [J39] N.K. Tolochko, S.E. Mozzharov, I.A. Yadroitsev, **T. Laoui**, L. Froyen, V.I. Titov, M.B. Ignatiev, “*Selective laser sintering and cladding of single-component metal powders*” Rapid Prototyping Journal, Vol. 10, No. 2, pp. 88-97 (2004).
- [J40] **T. Laoui**, N.K. Tolochko, A.S. Artushkevich, L. Froyen, “*Bone osseointegration tests performed on titanium dental root implants made by laser processing*” International Journal of Product Development, vol. 1, No. 2, pp. 165-171 (2004).
- [J41] W. Jiang, K. Yahiaoui, F.R. Hall, **T. Laoui**, “*FE simulation of multipass welding: Full 3D versus generalised plain strain or axisymmetric models*” Journal of Strain Analysis for Engineering Design, vol. 40 (No. 6), pp. 587-598 (2005).
- [J42] E.C. Santos, M. Shiomi, K. Osakada, **T. Laoui**, “*Rapid Manufacturing of metal components by laser forming*”, International Journal of Machine Tools & Manufacture” 46, pp. 1459-68 (2006). ***Rated among the top 25 hottest articles in ScienceDirect for the period January-March 2006.***
- [J43] **T. Laoui**, E.C. Santos, K. Osakada, M. Shiomi, M. Morita, S.K. Shaik, F. Abe, M. Takahashi, N.K. Tolochko, “*Properties of titanium dental implant models made by laser processing*”, Proc. Inst. Mech. Eng., Part C, Journal of Mechanical Engineering Science, Vol. 220 (6), pp. 857-863 (2006).

- [J44] J.F. Shi, C.J. Wang, **T. Laoui**, W. Hart, R.F. Hall, “A *dynamic model of simulating stress distribution in the distal femur after total knee replacement*”, Part H, Proc. Inst. Mech. Eng., Journal of Engineering in Medicine, Vol. 221 (8), pp. 903-12 (2007).
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- [J50] **T. Laoui**, “*Corrosion Performance of Copper Coated with Carbon Nanotubes*” AJSE-C Theme Issue June 2010 "Science & Engineering at the Nanoscale", Vol. 35, Number 1C, pp. 57-63 (2010)
- [J51] Faraj A. Abuilawi, **Tahar Laoui**, Mamdouh Al-Harathi and Muataz Ali Atieh, “*Modification and Functionalization of Multi-walled Carbon Nanotube (MWCNT) Via Fisher Esterification*” AJSE-C Theme Issue June 2010 "Science & Engineering at the Nanoscale", Vol. 35, Number 1C, pp. 37-48 (2010).
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- [J53] Thomas Humplik, Jongho Lee, Sean O’Hern, B T Fellman, Mirza Aqeel Baig, Syed Fida Hassan, Muataz Ali Atieh, Faizur Rahman, **Tahar Laoui**, Evelyn Wang, Rohit Karnik, “*Nanostructured materials for water desalination*” Nanotechnology 22, pp. 1-19 (2011).

- [J54] Faheemuddin Patel, Mirza Aqeel Baig, **Tahar Laoui**, “*Processing of porous alumina substrate for multilayered ceramic filter*”, *Desalination and Water Treatment* 35, issue 1-3, pp. 33-38 (2011).
- [J55] Jongho Lee, Faizur Rahman, Tahar Laoui, Rohit Karnik, “*Bubble-induced damping in displacement-driven microfluidic flows*”, *Physical Review E* 86, *Phys. Rev. E* (86): 026301 (2012)
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- [J63] **Tahar Laoui**, Faheemuddin Patel, Nouari Saheb and Nasser Al-Aqeeli, “Manufacture of microporous ceramic layer by suspension sedimentation for filtration applications”, *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, vol. 227 (7), pp. 1032-1038 (2013).

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- [J70] Sean C. O’Hern, Michael S. H. Boutilier, Juan-Carlos Idrobo, Yi Song, Jing Kong, **Tahar Laoui**, Muataz Atieh, and Rohit Karnik, “Selective Ionic Transport through Tunable Subnanometer Pores in Single-Layer Graphene Membranes”, *Nano Letters* 14,1234-1241 (2014).
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- [J72] Bukola S, Merzougui B, Akinpelu A, **Laoui T**, Hedhili MN, Swain GM, Shao M. “Fe-N-C Electrocatalysts for Oxygen Reduction Reaction Synthesized by Using Aniline and Fe⁺³/H₂O₂ Catalytic System”, *Electrochimica Acta* 146, 809–818 (2014).
- [J73] Nabi Bakhsh, Fazal Ahmad Khalid, Abbas Saeed Hakeem, **Tahar Laoui**, “Dispersion of Carbon Nanotubes in Alumina using a Novel Mixing Technique and Spark Plasma Sintering of the Nanocomposites with Improved Fracture Toughness”, *Advances in Science and Technology* Vol. 89, pp 76-81 (2014)
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- [C43] T. Humplik, **T. Laoui**, E.N. Wang, “*Transport across sub-nanometer zeolite pores for water desalination*”, 8th ASME International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM2010), Montreal, Canada, 1-5 August 2010, pp.1-5 (2010).
- [C44] Jongho Lee, Sean O’hern, Rohit Karnik, **Tahar Laoui**, “*Vapor-trapping Membrane for Reverse Osmosis*”, Proceedings of the ASME 2010 International Mechanical Engineering Congress & Exposition, IMECE2010, Vancouver, British Columbia, Canada, 12-18 November, 2010, pp. 1-5. Won the **Grand Prize in the Best Poster Competition** at the 2010 ASME society-wide Micro/Nano Technology Forum.
- [C45] **Tahar Laoui**, Syed Fida Hassan, Rohit Karnik, Evelyn Wang, Khalid Al-Hooshani, Faizur Rahman, Muataz Ali Atieh, Thomas Humplik, Jongho Lee, Batya Fellman, Sean O’Hern, Mirza Aqeel Baig, and Faheemuddin Patel, “*Nanostructured membranes for water desalination*”, Proceedings of the 7th International Membrane Science & Technology Conference/6th Conference of the Aseanian Membrane Society (AMS6/IMSTEC10), Sydney, Australia, 22-26 November (2010), pp. 1-8.
- [C46] **T. Laoui**, F. Patel and M.A. Baig, “*Processing of alumina substrate for nanostructured multilayered ceramic filter*”, Proceedings of the 7th International Membrane Science & Technology Conference/6th Conference of the Aseanian Membrane Society (AMS6/IMSTEC10), Sydney, Australia, 22-26 November (2010), pp. 1-8.
- [C47] Faheemuddin Patel, Saheb Nouari, **Tahar Laoui**, “*Fabrication of Microporous Ceramic Layer by Suspension-Sedimentation and Microwave Sintering for Filtration applications*” Proceedings of The Saudi International Advanced Materials Technologies Conference 2011, Riyadh, Saudi Arabia, 17–19 October, (2011), pp. pp. 12-18, www.kacstamtc.org
- [C48] Mirza Aqeel Baig, Oki Muraza, **Tahar Laoui**, Evelyn Wang “*Microwave synthesis of LTA zeolite layer on mesoporous TiO₂ coated α -alumina support*” Proceedings of The Saudi International Advanced Materials Technologies Conference 2011, Riyadh, Saudi Arabia, 17–19 October, (2011), pp. 93-102, www.kacstamtc.org
- [C49] **Tahar Laoui**, Abbas S. Hakeem, Kachalla Abdullahi, Nouari Saheb, Nasser Al-Aqeeli “*Effect of consolidation mechanisms on the properties of nanostructured WC-6, 9, 12 wt%Co hardmetals*” Proceedings of ASME 2011 International Mechanical Engineering Congress & Exposition, IMECE2011, Denver, Colorado, USA, 11-17 November, (2011), pp. 1-8.
- [C50] Samir Mekid, **Tahar Laoui**, Faheemuddin Patel, “*Exploring a manufacturing route to produce WC-based micro-cutting tool with nanostructured material*”, Proceedings of ASME 2011 International Mechanical Engineering Congress & Exposition, IMECE2011, Denver, Colorado, USA, 11-17 November, (2011), pp. 1-6.

- [C51] Mirza Aqeel Baig, **Tahar Laoui**, Farid Fadhillah, Oki Muraza, Zafarullah Khan “*Synthesis of zeolite A crystals in the presence of crystal growth inhibitors by microwave assisted hydrothermal technique*”, Proceedings of ASME 2011 International Mechanical Engineering Congress & Exposition, IMECE2011, Denver, Colorado, USA, 11-17 November, (2011), pp. 1-5.
- [C52] Jongho Lee, Sean O’Hern, Tahar Laoui, Faizur Rahman, and Rohit Karnik, “*Vapor transport through short hydrophobic nanopores for desalination*” Abstract at 64th Annual Meeting of the American Physical Society, Division of Fluid Dynamics (DFD11), Baltimore, MD, USA, 20-22 November, 2011.
- [C53] Shalabh C. Maroo, Tom Humplik, **Tahar Laoui**, Evelyn N. Wang, “*Water Infiltration in ZSM-5 Zeolites: Effect of Pore Volume and Water Structure*” Paper # MNHMT2012-75322, Proceeding of the ASME 2012, 3rd Micro/Nanoscale Heat and Mass Transfer International Conference MNHMT2012, 3-6 March 2012, Atlanta, Georgia, USA, pp. 1-7.
- [C53] Turki Nabieh Baroud, **Tahar Laoui**, “Influence of synthesis parameters on MFI zeolite layer for reverse osmosis (RO) water desalination process”, 3rd National Saudi Student Conference, Al-Khobar, KSA, 28 April – 2 May 2012.
- [C54] T. N. Baroud, **T. Laoui**, O. Muraza, F. Patel, E. Wang, “Effect of Seeding Conditions on the Morphology of MFI Zeolite Membrane”, European Membrane Society – Middle East School of Membrane Technology for Sustainable Water Desalination and Reuse, King Abdullah University of Science and Technology (KAUST), April 28 – May 3, 2012. **Received the European Membrane Society (EMS) Award for the Best Poster Presentation.**
- [C55] Hamza Abbas Hamza, Muataz Ali Atieh, **Tahar Laoui**, “Removal of phenol by carbon nanotubes and activated carbon-a comparative analysis”, Proceedings of Sixteenth International Water Technology Conference, IWTC 16, 7-9 May 2012, Istanbul, Turkey, pp. 1-7.
- [C56] Turki N.M. Baroud, Oki Muraza, Faheemuddin Patel, Evelyn N. Wang, **Tahar Laoui**, “Effect of Dielectric Constant of Zeolite Precursors on the Morphology of MFI Zeolite Membrane in Microwave-Assisted Hydrothermal Synthesis” International Symposium on Zeolites and MicroPorous Crystals, Hiroshima, Japan, 28 July – 1 August, 2012.
- [C57] N. Saheb, A. Khalil, A. S. Hakeem, **T. Laoui**, N. Al-Aqeeli, (Nouari Saheb, Abdullah Khalil, Abbas Saeed Hakeem, Tahar Laoui, Nasser Al-Aqeeli,), “Carbon nanotube reinforced Al6061 and Al2124 nanocomposites” 15th European Conf on Composite Materials (ECCM15), Venice, Italy, 24-28 June 2012.

- [C58] Turki N.M. Baroud, Evelyn N. Wang, **Tahar Laoui**, “Seeding of Porous Alumina Substrate with MFI Zeolite Nanocrystals Using Spin-coating Technique” Euromembranes 2012 Conference, London, UK, 23-17 Sept 2012.
- [C59] Jongho Lee, **Tahar Laoui**, Rohit Karnik, “Water Desalination via Vapor Transport through Short Hydrophobic Nanopores”, ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, Texas, USA, Nov. 9-15, 2012
- [C60] SEAN C. O'HERN, CAMERON A. STEWART, MICHAEL S. H. BOUTILIER, JONGHO LEE, TARUN JAIN, JUAN-CARLOS IDROBO, **TAHAR LAOUI**, MOTAZ ATIEH, ROHIT KARNIK, “MOLECULAR TRANSPORT THROUGH POROUS GRAPHENE MEMBRANES”, MRS 2012 Fall meeting, Boston, 25-30 Nov 2012
- [C61] Ahmad A. Adewunmi, Muataz A. Atieh, **Tahar Laoui**, “Effect of MWCNT modified with 1-Octadecanol (C₁₈H₃₈O) on the Mechanical, Thermal and Rheological properties of HDPE Nanocomposites”, Sustainable Polymers Conference, Florida, USA, May 20-23, 2013 (organized by ACS Division of Polymer Chemistry, Inc., USA)
- [C62] Mohanned M. El Ameen, Oki Muraza, Zuhair Maliabari, **Tahar Laoui**, “Controlled in-situ growth of SAPO-34 on SiC Foams”, 6th Int. Zeolite Membranes Meeting (IZMM2013), Jeju Island, Korea, 15-19 June 2013
- [C63] Sean C. O'Hern, Yi Song, Michael S. H. Boutilier, Suman Bose, Juan-Carlos Idrobo, **Tahar Laoui**, Muataz Atieh, Jing Kong, Rohit Karnik, “Tuning the Selectivity of Graphene Membranes by Nucleation and Growth of Pore Defects”, IMECE2013-67141- ASME IMECE 2013 Congress in San Diego, CA, November 2013
- [C64] Jongho Lee, **Tahar Laoui**, Rohit Karnik, “Desalination of Water by Fast Vapor Transport through Osmosis Membranes with Nanoscale Vapor Traps”, IMECE2013-67108- ASME IMECE 2013 Congress in San Diego, CA, November 2013
- [C65] T. Humplik, R. Raj, S.C. Maroo, **T. Laoui**, E.N. Wang, “Determining optimal zeolite properties for increasing water permeability”, MRS Spring Conference 2013, San Francisco, CA, March 2013
- [C66] T. Humplik, R. Raj, S.C. Maroo, **T. Laoui**, E.N. Wang, “Optimized Zeolite-based Membranes for Water Desalination, MARC 2014, Bretton Woods, New Hampshire, January 2014
- [C67] T. Humplik, R. Raj, S.C. Maroo, **T. Laoui**, E.N. Wang, “Selective Water Transport Across Uniform Sub-Nanometer Pores in Microfabricated

- Membranes”, Hilton Head – Sensors, Actuators, and Microsystems Workshop, Hilton Head Island, South Carolina, USA, June 2014
- [C68] Belabbes Merzougui, Saheed Bukola, Akeem Akinpelu, and Abass Hakeem, and **Tahar Laoui**, “Improved activity and stability of nitrogen doped carbon as Pt-free catalysts for oxygen reduction reaction”, Fuel Cells 2014 Science & Technology Conference, Amsterdam, Netherlands, 3-4 April 2014.
- [C69] Zahid Uwais, Talha Ansari, Asad Ahmed, Dawood Al Dawood, **Tahar Laoui**, “Design of flow systems for testing synthesized membrane in water treatment application”, The 5th Scientific Conference for Students of Higher Education in KSA, Riyadh, Saudi Arabia, 31 March- 4 April 2014.
- [C70] J. Lee, **T. Laoui**, and R. Karnik “Nanofluidic Transport Governed by the Liquid-Vapour Interface,” International Conference on Micro & Nanofluidics, University of Twente, The Netherlands, May 18-21, 2014
- [C71] Abbas Saeed Hakeem, Raja Muhammad Awais Khan, Moath Mohammad Al-Malki, Faheemuddin Patel, Akolade Idris Bakare, Sadaqat Ali, Stuart Hampshire, **Tahar Laoui** “Development and processing of SiALON nano-ceramics by Spark Plasma Sintering”, CIMTEC 2014-13th International Ceramic Congress, Montecatini, Italy, 8-13 June 2014
- [C72] Nabi Bakhsh, Fazal Ahmad Khalid, Abbas Saeed Hakeem, **Tahar Laoui**, “Dispersion of Carbon Nanotubes in Alumina using a Novel Mixing Technique and Spark Plasma Sintering of the Nanocomposites with Improved Fracture Toughness”, CIMTEC 2014-13th International Ceramic Congress, Montecatini, Italy, 8-13 June 2014
- [C73] A. Ibrahim, A. Owais, M. Atieh, R. Karnik, **T. Laoui** “Evolution of Cu surface morphology and its effect on graphene synthesized by Chemical Vapor Deposition”, CIMTEC 2014- 6th Forum on New Materials, Montecatini, Italy, 9-20 June 2014
- [C74] M. Al Malki, R. Khan, F. Patel, AS Hakeem, **T. Laoui** “Properties of nano-SiALON ceramics prepared by spark plasma sintering technique”, 11th Internatinal Conf on Ceramic Materials and Components for Energy and Environmental Applications, Vancouver, Canada, 14-19 June 2015
- [C75] AS Hakeem, A. Ibrahim, **T. Laoui** “Processing of cubic boron nitride reinforced SiALON nano-composites by spark plasma sintering”, 11th Internatinal Conf on Ceramic Materials and Components for Energy and Environmental Applications, Vancouver, Canada, 14-19 June 2015
- [C76] **T. Laoui**, H. Shahzad, K. Ihsanullah, F. Patel, A. Al-Aqeeli, M. Atieh, “Processing and characterization of activated carbon/carbon nanotubes-alumina composite membranes for water filtration”, 11th Internatinal Conf on

Ceramic Materials and Components for Energy and Environmental Applications, Vancouver, Canada, 14-19 June 2015

- [C77] Ihsanullah, **T. Laoui**, A. Al-Amer, A. Al-Aqeeli, F. Patel, M. Atieh, “New Generation of Inorganic Membrane: Carbon Nanotubes Membrane”, Membranes Conf 2015, Aachen, Germany, 6-10 Sept. 2015
- [C78] Feras Kafieh, Zafarullah Khan, Ahmed Ibrahim, Muataz Atieh, **Tahar Laoui**, “Synthesis of graphene membranes: effect of substrate surface properties on monolayer graphene transfer”, Membranes Conf 2015, Aachen, Germany, 6-10 Sept. 2015
- [C79] Doojoon Jang, Michael S Boutilier, Juan C Idrobo, **Tahar Laoui**, Rohit Karnik “Tuning Water-Selective Pores in Monolayer Graphene Membranes for Nanofiltration,” Materials Research Society MRS 2016 Spring Meeting, at the Phoenix Convention Center and Sheraton Grand Phoenix Hotel in Phoenix, Arizona, USA, March 28-April 1, 2016
- [C80] **Tahar Laoui** , Hafiz S. Khurram, Mohammed A. Hussein, Faheemuddin Patel, Muataz Atieh, Nasser Al-Aqeeli, “Development and Characterization of Alumina-CNT Porous Membranes for Water Purification”, NanoMaterials for Energy and Environment - NanoMatEn 2016 conference, Paris, France, 1-3 June 2016
- [C81] Hafiz S. Khurram, Mohammed A. Hussein, Faheemuddin Patel, Nasser Al-Aqeeli, Muataz Atieh, **Tahar Laoui**, “Processing of Alumina-Carbon Nanotubes Composite Membranes for Water Filtration Applications”, The 4th Saudi International Nanotechnology Conference (SINC 2016), organized by KACST-KFUPM, KFUPM, Dhahran, KSA, 25-26 Oct 2016.
- [C82] B. Ahmed, A. Hakeem, A. Ibrahim, M. Ehsan, **Tahar Laoui**, “Spark Plasma Sintering of Ca- α -Sialon Matrix Reinforced with Cubic Boron Nitride Particles”, The 4th Saudi International Nanotechnology Conference (SINC 2016), organized by KACST-KFUPM, KFUPM, Dhahran, KSA, 25-26 Oct 2016.
- [C83] Tajudeen A. Oyehan, Faheemuddin Patel, Olabemiwo A. Fatai, Bassam S. Tawabini, **Tahar Laoui**, “Enhancing the Adsorptive Capacity of Carbon Nanofiber (CNF) for the Removal of Cadmium from Contaminated Water”, The 4th Saudi International Nanotechnology Conference (SINC 2016), organized by KACST-KFUPM, KFUPM, Dhahran, KSA, 25-26 Oct 2016.
- [C84] Olabemiwo A. Fatai, Bassam S. Tawabini, Faheemuddin Patel, Tajudeen A. Oyehan, Mazen Khaled, **Tahar Laoui**, “Investigating the Efficiency of Polyelectrolyte Coated Fly ash in Removing Cadmium from Contaminated water”, The 4th Saudi International Nanotechnology Conference (SINC 2016), organized by KACST-KFUPM, KFUPM, Dhahran, KSA, 25-26 Oct 2016.

- [C85] **T. Laoui (invited presentation)** “Development of carbon-based inorganic membranes for water filtration and desalination applications”, 9th International Desalination Workshop (IDW 2016), Abu Dhabi, UAE, 13-15 Nov 2016
- [C86] H. K. Shahzad, M. A. Hussein, F. Patel, N. Al-Aqeeli, **T. Laoui**, “Porous Alumina-Carbon Nanotubes Nanocomposite Membranes Processed via Spark Plasma Sintering for Heavy Metal Removal from Contaminated Water”, 19th International Conference on Inorganic Membranes (ICIM), May 26-27, 2017, Barcelona, Spain
- [C87] Olabemiwo A. Fatai, Bassam S. Tawabini, Faheemuddin Patel, Tajudeen A. Oyehan, Mazen Khaled, Mujataz Atieh, **Tahar Laoui**, “Assessment of cadmium (II) removal from water by innovative polyelectrolyte-coated fly ash”, 15th International Conference on Environmental Science and Technology, 31 Aug- 2 Sept 2017, Rhodes, Greece.
- [C88] Bilal Anjum, **T. Laoui**, “Effect of nano-size oxi-nitride starting precursors on spark plasma sintering of calcium sialons along the alpha/(alpha+beta) phase boundary”, KFUPM 8th Student Forum, Saudi Arabia, 4-5 Oct. 2017
- [C89] Olabemiwo A. Fatai, Bassam S. Tawabini, Faheemuddin Patel, Tajudeen A. Oyehan, Mazen Khaled, **Tahar Laoui**, “Assessment of Polyelectrolyte Coated Fly Ash for Cadmium Removal in Polluted Water”, 5th Water Arabia Conference & Exhibition, 17-19 Oct 2017, Khobar, Saudi Arabia. **Winner of the Best Poster Presentation** (1st place-post graduate level).

4.3.6 Membership in Scientific Committee of Conferences:

- Member of the Scientific Committee for 9th International Desalination Workshop (IDW 2016), Yas Island, Abu Dhabi, United Arab Emirates, 13-15 Nov 2016
http://desalworkshop.org/cms/bbs/dk_content.php?ht_id=info_04
- Member of the Scientific Committee for 4th, 5th, 6th and 7th National Conference on Rapid & Virtual Prototyping and Applications, June 2003, May 2004, June 2005 and June 2006, Buckinghamshire Chilterns University College, UK.
- Member of the Scientific Committee for 1st, 2nd, 3rd, 4th and 5th International Conference on Advanced Research in Virtual and Rapid Prototyping, October 2003, 2005, 2007, 2009, 2011, Leiria, Portugal:
www.vrap.ipleiria.pt/Scientific Committee
- Member of the Scientific Committee for International Conference on Rapid Product Development, June 25-27, 2003, CIRTES, Saint-DIE-DES-Vosges, France.

4.3.7 Session Chair for Following Conferences:

- 9th International Desalination Workshop (IDW 2016), Session 8 – Special joint Korea-GCC session, Abu Dhabi, UAE, 13-15 Nov 2016
- NanoMaterials for Energy and Environment - NanoMatEn 2016 conference, Session II - Nanotechnology for Environmental Applications, 1-3 June 2016
- Nanotech France 2016 conference, Session II - Nanomaterials synthesis and properties, Paris, France, 1-3 June 2016
- 4th International Conference on Advanced Research in Virtual and Rapid Prototyping, *Virtual Environments and Simulations 4*, 6-10 Oct 2009, Leiria, Portugal.
- International Conference on Advanced Materials, *Advances in Materials and Processing Technologies*, 2-5 Nov. 2008, Manama, Bahrain.
- Engineering Educational Conference 2006: International Conference on Innovation, Good Practice and Research in Engineering Education, *Learning through Design Projects*, 24-26 July 2006, Liverpool, UK.
- 2nd International Conference on Advanced Research in Virtual and Rapid Prototyping, *Materials*, 28th Sept-1st Oct. 2005, Leiria, Portugal.
- 1st International Conference on Advanced Research in Virtual and Rapid Prototyping, *Materials development for rapid prototyping/manufacturing*, 1-4 October, 2003, Leiria, Portugal.
- International Conference on Rapid Product Development, *Users experiences on RPD technologies applied to plastic forming*, CITRES, Saint-Die-des-Vosges, June 25-27, 2003, France.
- European Conference on Rapid Prototyping & Manufacturing EURO-RP2001 Conference, *Applications in rapid prototyping*, Paris, June 7-8, 2001. France.
- 8th International Conference on Rapid Prototyping, *Rapid Tooling III*, Tokyo, Japan, June 12-14, 2000.
- 8th European Conference on Rapid Prototyping & Manufacturing, *Process Development II*, Nottingham, UK, July 6-8, 1999.

4.3.8 Patents filed/issued

1. “*Method of Removing E. Coli Bacteria from an Aqueous Solution*”, Muataz A. Atieh, Amjad B. Khalil, **Tahar Laoui**, Samer M. Al-Hakami, US Patent 8,754,041 – (issued June 17, 2014)
2. “*High-density and high-strength WC-based Cemented Carbide*”, Khwaja Muhammad, Nouari Saheb, **Tahar Laoui**, Nasser Al-Aqeeli, US Patent 9,518,308 – (issued December 13, 2016)
3. “*Method for producing Pt-free electrocatalysts for fuel cells and batteries*” Belabbes Ahmed Merzougui, Saheed Abidemi Bukola, Adeola Akeem Akinpelu, Zain Hassan Abdallah Yamani, **Tahar Laoui**, US Patent 9,257,705 – (issued February 9, 2016)
4. “*SiAlON ceramics and a method of preparation thereof*”, Abbas Saeed Hakim, **Tahar Laoui**, Abbas Saeed Hakeem, Tahar Laoui, Moath Mohammad Almaliki, Awais Muhammad Raja Khan, Faheemuddin Patel, Publication No. US 2018/ 9764988 – (issued September 19, 2017)
5. “*Fabrication of carbon nanotube membranes*” Muataz Atieh, Ihsanullah, **Tahar Laoui**, Publication No. US 2018/ 9776140 – (issued October 3, 2017)
8. “*Nanofluids containing carbon nanotubes and metal oxide nanoparticle composites with enhanced heat transfer and heat capacity properties*”, Muataz Ali Atieh, Abdallah Darweesh Manasrah, Usamah Ahmad Al-Mubaiyedh, **Tahar Laoui**, Rached Ben-Mansour, U.S. Patent 2018/9879167 - (issued Jan. 30, 2018)
7. “*Mitigating Leaks in Membranes*”, Rohit N. Karnik, Suman Bose, Michael S. H. Boutilier, Nicolas G. Hadjiconstantinou, Tarun Kumar Jain, Sean C. O’Hern, **Tahar Laoui**, Muataz A. Atieh, Doojoon Jang, US Patent No. 9,901,879 – Publication No. US 2018/9901879 - (issued Feb 27, 2018)
8. “*Method of forming ceramic material containing aluminum particles*”, Abbas Saeed Hakeem, **Tahar Laoui**, Moath Mohammad Almaliki, Awais Muhammad Raja Khan, Faheemuddin Patel, U.S. Patent 2018/10000421 - (issued June 19, 2018)
9. “*Graphene Based Filter*”, Rohit N. Karnik, Sean C. O’Hern, Michael S. H. Boutilier, Cameron A. Stewart, Harold S. Au, Nicolas G. Hadjiconstantinou, **Tahar Laoui**, Muataz Atieh. U.S. Patent Application 61/611067
10. “*Formation of pores in atomically thin layers*”, Piran Ravichandran Kidambi, Ahmed Ibrahim Ali Ibrahim, **Tahar Laoui**, Jing Kong, Rohit Nandkumar Karnik, U.S. Provisional Application No.: 62/418,055, filed 3 Nov 2017

11. “*Electrospun Polyacrylonitrile-graphene oxide-silica hybrid membrane for oil water separation*”, **T Laoui**, Numan Naseeb, Abdul Azeem, Zafarullah Khan, and M Atieh, US Patent Application, submitted June 2018.

4.3.9 Technical Reports

I have contributed to more than 100 progress reports written for various projects throughout the period 1991-present.

4.3.10 Research Group Leadership

- Coordinator for the Membrane Research Group, Dept. of Mechanical Engineering, KFUPM, 2016-2018.
- Coordinator for the Nanotechnology Research Group, Dept. of Mechanical Engineering, KFUPM, 2011-2018.
- Coordinator for the Materials and Medical Research Group at School of Engineering & Built Environment, University of Wolverhampton, UK, 2003-06.
- Director of Engineered Materials Research Hub, within Research Institute in Advanced Technology (RIATec.), University of Wolverhampton, UK, 2004-06.

5.0 PROFESSIONAL ACTIVITIES

5.1 LAB DIRECTORSHIP

Director of Nanotechnology Lab, Mech Engg. Dept., KFUPM, Sept. 2008-2018

Director of Membrane Lab, Mech Engg. Dept., KFUPM, Sept. 2016-2018

Director of Powder Metallurgy Lab, School of Engineering & Build Environment, University of Wolverhampton, UK, Sept. 2004-2008

8.3 Membership in editorial/advisory boards

- Member of the Editorial Board for the Journal “Membranes”, ISSN 2077-0375. <http://www.mdpi.com/journal/membranes/editors>
- Member of the Editorial Board for the Journal “Materials Letters”, publisher Elsevier.
- Member of the Editorial Board for the Journal “npj Clean Water”, publisher Nature-Springer. <http://www.nature.com/npjcleanwater/about/editorial-board>
- Member of the International Scientific Advisory Board for the Centre for Rapid and Sustainable Product Development, a Research Centre hosted by the Polytechnic Institute of Leiria, Leiria, Portugal, 2007-present (<http://www.cdr-sp.ipleiria.pt/>).
- Member of the International Committee for the VIRTUREAL Project funded by the French Government. This project has an international scope on the dissemination and implementation of the rapid product development tools, project duration 2002-05.

5.2 MEMBERSHIP OF INTERNATIONAL SCIENTIFIC ADVISORY BOARD/COMMITTEE

- Member of the International Scientific Advisory Board for the Centre for Rapid and Sustainable Product Development, a Research Centre hosted by the Polytechnic Institute of Leiria, Leiria, Portugal, 2007-present (<http://www.cdr-sp.ipleiria.pt/>).
- Member of the International Committee for the VIRTUREAL Project funded by the French Government. This project has an international scope on the dissemination and implementation of the rapid product development tools, project duration 2002-05.
- Member of the Advisory Board for the Journal ‘Membranes’, ISSN 2077-0375. <http://www.mdpi.com/journal/membranes/editors>

5.3 MEMBERSHIP IN SCIENTIFIC NETWORKS/PLATFORMS

- Member of the Engineering and Physical Sciences Research Council (EPSRC) Peer Review College, UK, 2006-2009 (www.epsrc.ac.uk)

- Member of SCERN (EPSRC Network on Structural Ceramics), 2007-2008
- Member of Rapid Manufacturing (RM) Technology Platform for developing a vision for the European Commission towards Framework Program 7 (www.rm-platform.com).
- Member of European Technology Platform on Advanced Engineering Materials and Technologies (EuMaT) for developing a vision for the European Commission towards Framework Program 7 (www.eumat.org).
- Affiliate member of EU-FP6 NoE - 4M (Network of Excellence on Multi-Material Micro Manufacturing, www.4m-net.org)
- Associate member of EU-FP6 NoE - I*PROMS (Network of Excellence on Innovative Production Machines and Systems, www.iproms.org)
- Invited to become member of Intelligent Manufacturing Systems-Rapid Product Development (IMS-RPD) Network led by Fraunhofer Institute in Stuttgart, Germany, October 2005, that developed later into the RM Platform, mentioned above.

5.4 MEMBERSHIP IN SCIENTIFIC COMMITTEE OF CONFERENCES

- Member of the Scientific Committee for 4th, 5th, 6th and 7th National Conference on Rapid & Virtual Prototyping and Applications, June 2003, May 2004, June 2005 and June 2006, Buckinghamshire Chilterns University College, UK.
- Member of the Scientific Committee for 1st, 2nd, 3rd, 4th and 5th International Conference on Advanced Research in Virtual and Rapid Prototyping, October 2003, 2005, 2007, 2009, 2011, Leiria, Portugal. www.vrap.ipleiria.pt/ScientificCommittee
- Member of the Scientific Committee for International Conference on Rapid Product Development, June 25-27, 2003, CIRTES, Saint-Die-des-Vosges, France.

5.5 REVIEWER OF RESEARCH PROPOSALS

- Reviewed several research proposals for the Engineering and Physical Sciences Research Council (EPSRC), UK (www.epsrc.ac.uk), 2006-2008.
- Reviewed several research proposals for the “Yorkshire Forward Industrial Research and Development Award for Large Companies”, UK (<http://www.yorkshire-forward.com/>), 2006-2007.
- Reviewed research proposals/project for European Commission (www.cordis.lu), 2004-2014
- Reviewed a research proposal for National Science Foundation (NSF), USA (www.nsf.gov).
- Reviewed a research proposal co-funded by the Republic of Cyprus and the European Regional Development Fund (DESMI 2009-2010), 2010
- Reviewed a research proposal for The Kentucky Science and Engineering Foundation (KSEF), (USA), 2011
- Reviewed several research proposals for KACST, Saudi Arabia
- Reviewed several research proposals for Qatar National Research Fund (QNRF), Qatar.

5.6 REVIEWED PAPERS FOR JOURNALS AND CONFERENCES

- Materials Letters
- Materials Sciences & Engineering A
- Desalination
- Desalination and Water Treatment
- Membranes
- Journal of Membrane Science
- Journal of Materials Research
- Journal of Materials Science
- Advances in Materials Sciences & Engineering
- Journal of Materials Design & Applications
- ASME, Journal of Manufacturing Science and Engineering
- International Journal of Advanced Manufacturing Technology
- Engineering Science and Technology, an International Journal (Elsevier)
- Arab Journal for Science & Engineering
- Journal of Applied Physics
- Proceedings of the Institution of Mechanical Engineers, UK: Part B, Journal of Engineering Manufacture – and Part J, Journal of Engineering Tribology
- Rapid Prototyping Journal
- International Conference on Advanced Materials & Manufacturing Proceedings, Sharjah, UAE, July 2010
- TNT2009 International Conference on Trends in Nanotechnology, Barcelona, Spain, 7-11 September 2009. Contributed to selection of the Best Poster Competition.
- International Conference on Composites, Sharjah, UAE, January 2009
- 3rd, 2nd and 1st International Conference on Advanced Research in Virtual and Rapid Prototyping, October 2007, 2005 and 2003, Leiria, Portugal
- European Conference on Rapid Prototyping & Manufacturing (University of Nottingham, Loughborough Univ., UK): 1999, 2000, 2001
- 4th, 5th, 6th, 7th & 8th National Conference on Rapid & Virtual Prototyping and Applications, 2003/04/05/06/07, Buckinghamshire Chilterns Univ. College, UK.

5.7 Invited to deliver presentations

- Invited to give a presentation titled “Development of carbon-based inorganic membranes for water filtration and desalination applications” at the 9th International Desalination Workshop, 13-15 Nov. 2016, Abu Dhabi, United Arab Emirates.
- Invited to give a presentation titled “Inorganic membranes for water filtration and desalination: opportunities and challenges” at the 3rd Saudi International Conference on Advanced Materials Technology, 18-19 May 2015, Riyadh, Saudi Arabia.

6. TECHNICAL SEMINARS AND PRESENTATIONS

1. “Characterization of Titanium Carbonitride Cermets by Transmission Electron Microscopy”, Dept. of Physics, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, April 2, 1993.
2. “Développement des Matériaux pour les Applications de Coupe (Materials Development for cutting tool applications)”, Dept. of Metallurgy, Ecole Nationale Polytechnique, El-Harrach, Algiers, Algeria, April 13, 1997.
3. “Selective Laser Sintering of Hard Metal Powders”, Dept. of Mechanical, Materials & Aerospace Engineering, University of Central Florida, Orlando, Florida, USA, May 26, 1998.
4. “Production of Hard Metal Parts by Selective Laser Sintering”, Dept. of Materials Science and Engineering, University of Florida, Gainesville, Florida, USA, May 27, 1998.
5. “Performance of Cermets Processed by Selective Laser Sintering”, Fraunhofer-Institut fuer Werkstoff-und Strahltechnik (IWS), Dresden, Germany, November 18, 1999.
6. “Hardmetals and cermets: processing, properties and applications”, Dept. of Mechanical Engineering, Division PMA, University of Leuven (K.U. Leuven), Leuven, Belgium, May 25, 2000.
7. “Laser Sintering of metallic and hardmetal/cermet materials: processing and modeling/simulation aspects”, Flemish Institute of Technology and Research (VITO), Mol, Belgium, March 22, 2001.
8. “Rapid Prototyping and Selective Laser Sintering”, Dept. of Metallurgy & Materials Engineering, University of Leuven (K.U. Leuven), Leuven, Belgium, February 28, 2001.
9. “Manufacturing of titanium parts for medical purposes by combined selective laser sintering/melting of powders” 7th European Conference on Advanced Materials and Processes (EUROMAT 2001), Rimini, Italy, June 13, (2001).
10. “Preliminary medical results obtained from dental root implants made by laser processing” Materials Congress 2002, London, UK, April 10, (2002).
11. “Invited to give a research seminar on Rapid Prototyping & Manufacturing activities” at the RPMA Annual Research Seminar, University of Liverpool, September 25, (2003).

12. "Processing of dental root implants with a porous surface layer by micro-stereolithography", Proc. Time Compression Technology (TCT) Conference, UK, 12 November, (2003).
13. "Medical testing of Dental implants fabricated by selective laser processing of titanium powders" International Conference in Research on Virtual and Rapid Prototyping, Leiria, Portugal, 3 October, (2003).
14. "Microfabrication of dental root implants with a porous surface layer by micro-stereolithography" 2nd International Conference on Advanced Research in Virtual and Rapid Prototyping, Leiria, Portugal, 2 October , (2005).
15. "Amorphous Carbon coatings developed for application onto hip joints and other prostheses", Materials Congress 2006, Carlton House Terrace, London, UK, 7 April (2006).
16. "Development of an amorphous carbon coating for application onto hip joints - A preliminary study", 5th Conf. of UK Society for Biomaterials, 16 June 2006, Manchester, UK (2006).
17. "Development of a virtual learning environment tool for first year students taking Materials Science/Engineering", International Conference on innovation, good practice and research in Engineering Education, 26 July 2006, Liverpool, UK
18. (Keynote Lecture) "An approach to develop a rapid manufacturing knowledge-based environment" 3rd International Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP2007), Leiria, Portugal, September 28,(2007).
19. "Metal casting using self-removing moulds produced by selective laser sintering" 4th International Conference on High Tech Die Casting, Montichiari, Brescia, Italy, April 10, (2008).
20. "Research projects in nanostructured materials/nanocomposites" at Mechanical Engineering Dept., Nano-Focus Group, KFUPM, March 11, (2008).
21. "WC-based nanocomposite hardmetals synthesis and consolidation challenges", ME Dept. Seminar, KFUPM, December 23, (2008).
22. "Bio-nano applications of CNT and safety considerations", Workshop organized by CENT on Carbon Nanotubes: synthesis, purification, characterization and applications, KFUPM, May 27, (2009).
23. "Characterization of CNT and composites", Workshop organized by CENT on Carbon Nanotubes: synthesis, purification, characterization and applications, KFUPM, May 26, (2009).

24. “Nanocomposite WC-based hardmetals powder synthesis and sintering behavior”, at 7th International Conference on Composite Science ;& Technology: American University of Sharjah, UAE, January 21, (2009).
25. “Properties of copper coated carbon nanotubes”, at TNT2009 Trends in Nanotechnology International Conference, Barcelona, Spain, September 09, (2009).
26. “Chromium Removal from Aqueous Solutions Using Carbon Nanotubes”, International Conference on Water Conservation in Arid Regions (ICWCAR 09), Jeddah, Saudi Arabia, October 14, (2009).
27. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at KFUPM, January 13, 2010.
28. “Novel Nanostructured Membranes for seawater desalination”, KFUPM-MIT Workshop at MIT Boston, USA, June 25, (2010).
29. “Optimizing Microporous Ceramic Substrate as a Support for Nanostructured Multilayered Membranes for Water Treatment” 3rd Oxford Water and Membranes Research Event /Conference, Oxford, UK, 14 September, (2010).
30. “Nanostructured membranes for water desalination”, 7th International Membrane Science & Technology Conference/6th Conference of the Aseanian Membrane Society (AMS6/IMSTEC10), Sydney, Australia, 25 November (2010).
31. “Processing of alumina substrate for nanostructured multilayered ceramic filter”, 7th International Membrane Science & Technology Conference/6th Conference of the Aseanian Membrane Society (AMS6/IMSTEC10), Sydney, Australia, 25 November (2010).
32. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at KFUPM, January 12, 2011.
33. “Fabrication of Microporous Ceramic Layer by Suspension-Sedimentation and Microwave Sintering for Filtration applications”, International Advanced Materials Technologies Conference 2011, Riyadh, Saudi Arabia, 17-Oct-2011.
34. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at KFUPM, January 10, 2012.
35. “Removal of phenol by carbon nanotubes and activated carbon-a comparative analysis”, Sixteenth International Water Technology Conference, IWTC 16, 7-9 May 2012, Istanbul, Turkey.

36. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at MIT (USA), June 4, 2012.
37. “Seeding of Porous Alumina Substrate with MFI Zeolite Nanocrystals Using Spin-coating Technique”, EuroMembrane 2012 Conference, London, UK, 23-27 September 2012
38. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at MIT (USA), June 2, 2013.
39. “Improved activity and stability of nitrogen doped carbon as Pt-free catalysts for oxygen reduction reaction”, Fuel Cells 2014 Science & Technology Conference, Amsterdam, Netherlands, 3-4 April 2014.
40. “Novel Nanostructured Membranes for Seawater Desalination”, KFUPM-MIT Workshop at MIT (USA), June 3, 2014.
41. “Development and processing of SiALON nano-ceramics by Spark Plasma Sintering”, CIMTEC 2014-13th International Ceramic Congress, Montecatini, Italy, 8-13 June 2014
42. “Dispersion of Carbon Nanotubes in Alumina using a Novel Mixing Technique and Spark Plasma Sintering of the Nanocomposites with Improved Fracture Toughness”, CIMTEC 2014-13th International Ceramic Congress, Montecatini, Italy, 8-13 June 2014
43. “Properties of nano-SiALON ceramics prepared by spark plasma sintering technique”, 11th Internatinal Conf on Ceramic Materials and Components for Energy and Environmental Applications, Vancouver, Canada, 14-19 June 2015
44. “Processing and characterization of activated carbon/carbon nanotubes-alumina composite membranes for water filtration”, 11th Internatinal Conf on Ceramic Materials and Components for Energy and Environmental Applications, Vancouver, Canada, 14-19 June 2015
45. “Synthesis of graphene membranes: effect of substrate surface properties on monolayer graphene transfer”, Membranes Conf 2015, Aachen, Germany, 6-10 Sept. 2015
46. “Development and Characterization of Alumina-CNT Porous Membranes for Water Purification”, NanoMaterials for Energy and Environment - NanoMatEn 2016 conference, Paris, France, 1-3 June 2016
47. **(invited speaker)** “Development of carbon-based inorganic membranes for water filtration and desalination applications”, 9th International Desalination Workshop (IDW 2016), Abu Dhabi, UAE, 13-15 Nov 2016