

PERSONAL INFORMATION Mohamed Ali Ballem

📍 Misurata, Libya

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✉ Ballem77@yahoo.com, mohamed.ballem@eng.misuratau.edu.ly

Date of birth 18/01/1977 | Nationality Libyan

WORK EXPERIENCE

October 2016 – Present **Assistant Professor**

October 2013 – October 2016 **Head of Department + Lecturer**

Head of Department of Materials Science and Engineering, Faculty of Engineering, Misurata University, Libya

January 2013 – October 2013 **Lecturer**

Department of Materials Science and Engineering, Faculty of Engineering, Misurata University, Libya

June 2011 – May 2012 **Post-doctoral researcher**

Nanostructured Materials, Department of Physics, Chemistry and Biology, Linköping University, Sweden

2004 – 2005 **Engineer**

Centre of Solar Energy Research and Studies (CSERS), Tripoli, Libya

2002 – 2004 **Engineer**

Libyan Iron and Steel Company, Misurata, Libya

2000 – 2002 **Teacher**

Qaser Ahmad Institute of Mechanics and Electricity, Misurata, Libya

EDUCATION AND TRAINING

2006 – 2011 **Doctor of Philosophy**

Ph.D. in the area of Materials Science with specialization in Nanostructured Materials, Department of Physics, Chemistry and Biology, Linköping University, Sweden

Thesis Title: Synthesis of Mesoporous Silica and their Use as Templates for Metal and Metal Oxide Nanoparticles

1995 – 2000 **Bachelor of Science in Mechanical Engineering**

B.Sc. Degree in Mechanical Engineering with specialization in Applied Mechanics, Department of Mechanical Engineering, Faculty of Engineering-Hoon, Al-Tahadi University, Libya

Educational and academic partnership

Supervision of many projects for B.Sc. degree in Materials Engineering, and Mechanical Engineering; Teaching the following courses:

- Engineering drawing
- Mechanical properties of materials
- Physical metallurgy
- Fracture mechanics and failure analysis
- Powder Metallurgy
- Composite materials
- Advanced engineering mathematics

PERSONAL SKILLS

Mother tongue

Arabic

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	B2	C1
Swedish	A2	A2	A2	A2	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user

Common European Framework of Reference for Languages

Communication skills Good communication skills gained through my experience as teacher, and lecturer

Organisational / managerial skills Leadership (was responsible for a team of 12 people)

Job-related skills Materials Science with specialization in Nanostructured Materials and their applications. Mechanical Engineering with specialization in Applied Mechanics. Characterization techniques including:

- X-ray Diffraction (XRD)
- Scanning Electron Microscopy (SEM)
- Transmission Electron Microscopy (TEM)
- Surface Area and Porosimetry Analysis by Gas Sorption Technique (BET)
- Thermal Analysis Techniques, (DSC/TG)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Scanning Probe Microscopy (SPM)
- Magnetic Barkhausen Noise (MBN)

Computer skills Good command of:

- Microsoft Office (Word, Excel, PowerPoint)
 - Endnote
 - Origin
 - Photoshop
 - DevInfo
 - SolidWorks
- Beginner in ANSYS

Driving license B, BE, C, CE

ADDITIONAL INFORMATION

Publications

- 1) MM Blaow, **M.A. Ballem**, BA Shaw
Non-Destructive Characterization of Subsurface Plastic Deformation in Case Carburized Steel Using Magnetic Barkhausen Noise Technique
European Journal of Engineering Research and Science 4 (12), 126-131
- 2) M Blaow, **M.A. Ballem**
Effect of Barkhausen Detection Distance in Cold and Temper Rolled Low Carbon Steels: A Novel Approach
Journal of Materials Science and Chemical Engineering 7 (10), 1-11
- 3) I Badi, **M.A. Ballem**
Supplier selection using the rough BWM-MAIRCA model: A case study in pharmaceutical supplying in Libya
Decision Making: Applications in Management and Engineering, 2018 1 (2), 16-33
- 4) I Badi, **M.A. Ballem**, A Shetwan
Site selection of desalination plant in Libya by using combinative distance-based assessment (CODAS) method.
International Journal for Quality Research, 2018 12 (3), 609-624
- 5) I A Badi, AM Abdulshahed, A Shetwan, **M.A. Ballem**
A grey-based assessment approach to the site selection of a desalination plant in Libya
Grey Systems: Theory and Application, 2018 8 (3), 366-379

- 6) F. Elameen, and **M.A. Ballem**
Renewable Energy and Environmental Protection in the Context of Sustainable Development in Libya (in Arabic Language)
The International Journal of Engineering and Information Technology IJEIT, 2, (2015), 1-6
- 7) M. Blaow, and **M.A. Ballem**
Magnetic Barkhausen Noise: Aspects of Generation and Modeling
The International Journal of Engineering and Information Technology IJEIT, 1, (2015), 33-37
- 8) **M.A. Ballem**, M. Blaow, and F. Söderlind
Magnetic Behavior of Size-Controlled Co₃O₄ Nanoparticles Synthesized in the Pores of Functionalized Silica
The International Journal of Engineering and Information Technology IJEIT, 1, (2014), 8-11
- 9) **M.A. Ballem**, F. Söderlind, P. Nordblad, P.-O. Käll and M. Odén
Growth of Gd₂O₃ nanoparticles inside mesoporous silica framework
Microporous and Mesoporous Materials, 168 (2013)221-224
- 10) E. Escalera, **M.A. Ballem**, J.M. Cordoba, M-L Antti, and M. Odén
Synthesis of homogeneously dispersed cobalt nanoparticles in the pores of functionalized SBA-15 silica
Powder Technology, 221 (2012) 359–364
- 11) **M.A. Ballem**, X. Zhang, E.M. Johansson, J.M. Córdoba and M. Odén
Low temperature Nanocasting of Hematite Nanoparticles using Mesoporous Silica Molds
Powder Technology, 217 (2012) 269-273
- 12) J.M. Córdoba, **M.A. Ballem**, E.M. Johansson and M. Odén
Growth of single crystalline dendritic Li₂SiO₃ arrays from LiNO₃ and mesoporous SiO₂
Journal of Solid State Chemistry, 184 (2011) 1735-1739
- 13) X. Zhang, **M.A. Ballem**, Z.-J. Hu, J.P. Bergman and K. Uvdal
Nanoscale Light-Harvesting Metal-Organic Frameworks
Angewandte Chemie International Edition, 50 (2011)5728-5732
- 14) E.M. Johansson, **M.A. Ballem**, J.M. Córdoba and M. Odén
Rapid Synthesis of SBA-15 Rods with Variable Lengths, Widths, and Tunable Large Pores
Langmuir, 27 (2011) 4994-4999
- 15) **M.A. Ballem**, E.M. Johansson, J.M. Córdoba and M. Odén
Synthesis of hollow silica spheres SBA-16 with large-pore diameter
Materials Letters, 65 (2011) 1066–1068
- 16) **M.A. Ballem**, J.M. Córdoba and M. Odén
Mesoporous silica templated zirconia nanoparticles
Journal of Nanoparticle Research, 13 (2011)2743-2748
- 17) H.-T. Tsai, J.M. Córdoba, E.M. Johansson, **M.A. Ballem** and M. Odén
Silica SBA-15 template assisted synthesis of ultrasmall and homogeneously sized copper nanoparticles
Journal of Nanoscience and Nanotechnology, 11 (2011) 3493-3498
- 18) X. Zhang, **M.A. Ballem**, M. Ahrén, A. Suska, P. Bergman and K. Uvdal
Nanoscale Ln(III)-carboxylate coordination polymers (Ln = Gd, Eu, Yb): temperature-controlled guest encapsulation and light harvesting
Journal of the American Chemical Society, 132 (2010) 10391-10397
- 19) **M.A. Ballem**, J. M. Córdoba and M. Odén
Influence of synthesis temperature on morphology of SBA-16 mesoporous materials with a three-dimensional pore system
Microporous and Mesoporous Materials, 129 (2010) 106-111

Conferences and Seminars

- 1) **M.A. Ballem*** and M. Blaow
Characterization of Evolution of Spherodization of Cementite in Ovako-667 Steel by Magnetic Barkhausen Noise
International Conference on Innovative Materials and Structures Technologies in Metallurgical Engineering (METECH '14), Istanbul, Turkey (2014). Oral presentation
- 2) **M.A. Ballem*** and M. Odén
Mesoporous silica as a hard template for synthesizing of ZrO₂ and α-Fe₂O₃ nanoparticles
2nd International Workshop on 'Tailor-Made Nanomaterials and Applications for Chemical and Bio-Sensors' Department of Physics, Chemistry and Biology, Linköping University, Sweden, Jadavpur University, Kolkata, India (2011). Oral presentation

- 3)** E.M. Johansson*, **M.A. Ballem**, J.M. Córdoba, and M. Odén
Rapid syntheses of mesoporous silica with controllable morphology and unusually large pores
ECerS XII, Stockholm, Sweden (2011). Oral presentation
- 4)** J.M. Córdoba, **M.A. Ballem***, E.M. Johansson, and M. Odén
Growth of single crystalline dendritic Li_2SiO_3 arrays from LiNO_3 and mesoporous SiO_2
ECerS XII, Stockholm, Sweden (2011). Oral presentation
- 5)** E.M. Johansson*, **M.A. Ballem**, J.M. Córdoba, and M. Odén
Rapid syntheses of mesoporous silica with controllable morphology and unusually large pores
ESC2011, Falkenberg, Sweden (2011). Oral presentation
- 6)** E.M. Johansson*, **M.A. Ballem**, J.M. Córdoba, and M. Odén
Controlling the pore size and morphology of mesoporous silica
Frontiers in Silica Research, Göteborg, Sweden (2011). Poster presentation
- 7)** J.M. Córdoba*, H.T. Tsai, E.M. Johansson, **M.A. Ballem**, and M. Odén
Silica SBA-15 template assisted synthesis of ultrasmall and homogeneously sized copper nanoparticles
16th International Zeolite Conference (16th IZC) joint with the 7th International Mesostructured Materials Symposium (7th IMMS), Sorrento, Italy (2010). Poster presentation
- 8)** **M.A. Ballem***, J.M. Córdoba, and M. Odén
Influence of synthesis temperature on morphology of SBA-16 mesoporous materials
16th International Zeolite Conference (16th IZC) joint with the 7th International Mesostructured Materials Symposium (7th IMMS), Sorrento, Italy (2010). Poster presentation

* *Presenter*

Honours and awards In 2005, and based on my achievements during my Bachelor degree studies, the Libyan Higher Education Ministry rewarded me (60 months scholarship) under supervision of UN/UNESCO organization to pursue my PhD degree in Sweden.

- Memberships**
- Member of the organizing committee of research day at Misurata university
 - Member of the scientific committee of 2nd Iron and steel production symposium
 - Member of editorial board of The International Journal of Engineering and Information Technology
 - Reviewer at below scientific journals:
Materials Letters
Journal of Nanoparticle Research
The Journal of Solid State Chemistry
The International Journal of Engineering and Information Technology

- References**
- Prof. Odén, Magnus (my supervisor for Ph.D)
Nanostructured Materials, Department of Physics, Chemistry and Biology, Linköping University, 581 83 Linköping, Sweden
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Tel: +46 13 28 2996 | Fax: +46 13 13 7568
 - Prof. Córdoba, José Manuel (my co-supervisor for Ph.D)
Instituto de Ciencia de Materiales de Sevilla (ICMS), (Spain)
Email: jmcordova@icmse.csic.es
Tel: +34 95 448 95 00 | Fax: +34 95 446 01 65
 - Dr. Söderlind, Fredrik (my co-supervisor for Ph.D)
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