

# Dr. Mohamed Khater's Resume

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## Dr. Mohamed Abbas Khater

+966 (0) 596087906 – drmakhater@gmail.com

### SUMMARY:

I have remarkable experience of more than 22 years teaching and researching physics at national as well as international levels. Furthermore, I got my PhD from Dublin City University (Ireland, UK) in 2002 and hold an outstanding employee record.

### SPECIFIC EXPERIENCES AND SKILLS:

- Designing, delivering and coordinating the following physics subjects to science and engineering university students: general physics, modern physics, practical physics, biophysics, quantum mechanics, spectroscopy, lasers, advanced optics, and plasmas. At the end of the term, a standard report and file are developed for each course taught.
- Supervising many final year physics students for their graduation projects.
- Academic advisor for first year science students.
- Developing original research tools for novel applications of laser-produced plasmas in the UV-VIS and VUV spectral regimes.
- Developing optical spectroscopic techniques for quantitative characterization of materials. Sources included LPP, ICP, WSPA, and GDP.
- A wide-ranging knowledge and interest in the optics, photonics and spectroscopy fields. In particular, plasma spectroscopy, laser applications, communications, biomedical applications, remote sensing, radiation detection, imaging, systems design and testing, and microscopy.

### OCCUPATIONS HELD (Post PhD):

Al-Imam University, Riyadh, KSA Assistant Professor in Physics (FT).	Sep. 2010 – present
Qassim University, Qassim, KSA Assistant Professor in Physics (FT).	Feb. 2006 – Sep. 2009
New Cairo University for Sciences and Arts, Cairo, Egypt Physics Lecturer (PT).	Jan. 2005 – Jan. 2006
High Technological Institute, Cairo, Egypt Physics Lecturer (PT).	Jan. 2005 – Jan. 2006
Xtreme Technologies GmbH, Jena, Germany Research Scientist (FT).	Jul. 2004 – Dec. 2004
National Research Center, Cairo, Egypt Physics Researcher (FT).	Apr. 2003 – Jun. 2004
NCPST, Dublin, Ireland Postdoctoral Fellow and Research Officer (FT).	Feb. 2002 – Mar. 2003

# Dr. Mohamed Khater's Resume

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## **ADDITIONAL SKILLS:**

- High computing abilities including MS office applications.
- Good knowledge with commercial technical and scientific software.
- Scientific writing including research papers, project proposals and technical reports.
- High communications and team-working capability.
- Languages including Arabic and English.

## **EDUCATION AND TRAINING:**

PhD, Physics, Dublin City University, Ireland, UK Feb. 1998 – Jan. 2002  
Thesis: Spectroscopic Investigations of Laser-Produced Steel Plasmas.

MSc (Research), Physics, Ain Shams University, Egypt Mar. 1993 – Sep. 1996  
Thesis: Development of a Spectroscopic Technique for Determination of Trace Elements in Used Lubricating Oils.

MSc (Taught), Optics Division, Ain Shams University, Egypt Sep. 1991 – Nov. 1992

BSc, Physics, Ain Shams University, Egypt Sep. 1986 – Jun. 1990  
Excellent Grade (87.3%).

Dublin City University, Dublin, Ireland Feb. 1998 – Jan. 2002  
Assistant Lecturer and PhD Researcher.

Al-Azhr University, Faculty of Science, Egypt Sep. 1992 – Jan. 1998  
Physics Demonstrator and Tutor.

Ain Shams University, Faculty of Science, Egypt Sep. 1990 – Jan. 1998  
Physics Demonstrator and Tutor.

## **SELECTED PUBLICATIONS / CONFERENCES:**

1. M A Khater, Trace Detection of Light Elements by Laser-Induced Breakdown Spectroscopy (LIBS): Applications to Non-Conducting Materials, Optics & Spectroscopy 115 (2013) 574–590.
2. Mohamed A. Khater, Spatial characteristics of vacuum UV emission from laser-induced plumes in air, Appl. Surf. Sci. xxx (2013) xxx–xxx (Available online 16 September 2013).
3. Mohamed A. Khater, Description and characterization of two multichannel photo-detectors in the VUV spectral range, Optik xxx (2013) xxx–xxx.
4. Mohamed A. Khater, Features of VUV emission from plasmas generated by nanosecond laser pulses in air, Optics & Laser Technology 54 (2013) 315–320.
5. Mohamed Khater, Emission properties of plasmas induced by near IR laser pulses in the far VUV, Eur. Phys. J. Appl. Phys 63 (2013) 10801–10806.

## Dr. Mohamed Khater's Resume

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6. Mohamed A Khater, Vacuum ultraviolet assessment of ionization temperature by space-resolved emission spectroscopy, *Canadian Journal of Physics* 91 (2013) 733–736.
7. Mohamed A Khater, Characteristics and performance of a VUV spectrometer, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, Volume 714, 21 June 2013, Pages 1–4.
8. M A Khater, Laser-Induced Breakdown Spectroscopy (LIBS) for Light Elements Detection in Steel: State of the Art (invited review), *Spectrochim. Acta Part B* 81 (2013) 1–10.
9. M A Khater, Influence of Laser Pulse Energy on VUV Emission from Laser Plasmas under Various Ambient Conditions, *Rom. Journ. Phys.*, 58 (1–2) (2013) 181–192.
10. Mohamed A Khater, Spectral Characteristics of VUV Radiation Emitted by a Laser Plume, *Proc. APMAS 2013* xxxx.
11. M A Khater and E T Kennedy, Spectroscopic evaluation of electron density and temperature of a laser plasma source in the vacuum ultraviolet, *EPJ Plus* 127 (6) (2012) 61–67.
12. M A Khater, Application of Laser-ablated Plasmas to Compositional Analysis of Steel in the Vacuum Ultraviolet, *J. Korean Phys. Soc.* 58 (6) (2011) 1581–1586.
13. M A Khater, High Flux Laser-Produced Plasma (LPP) Source for Extreme Ultraviolet Lithographic (EUVL) Tools, internal report, Xtreme Technologies GmbH, December 2004.
14. M A Khater, The 3<sup>rd</sup> International EUVL Symposium, 1-4<sup>th</sup> November 2004, Miyazaki, Japan, (Activity: Poster and Talk Presentations).
15. Adrian Murphy, John S. Hirsch, Deirdre Kilbane, Eugene T. Kennedy, Mohamed A. Khater, *et al.*, VUV and soft x-ray emission from pre-plasmas irradiated with intense picosecond and femtosecond pulses, *Proc. SPIE 4876*, Opto-Ireland 2002: Optics and Photonics Technologies and Applications, 1196 (March 17, 2003).
16. M A Khater *et al.*, Low-level measurements of carbon concentrations in steel using laser-induced plasma spectroscopy (LIPS), *Proc. SPIE 4876*, Opto-Ireland 2002: Optics and Photonics Technologies and Applications, 894 (March 17, 2003).
17. M A Khater, J T Costello and E T Kennedy, Optimization of the Emission Characteristics of Laser-Produced Steel Plasmas in the Vacuum Ultraviolet: Significant Improvements in Carbon Detection Limits, *Appl. Spectrosc.* 56 (8), 970-83 (2002).
18. M A Khater, The 29<sup>th</sup> IOP Plasma Physics Group Conference (PPG2002), 25-28<sup>th</sup> March 2002, Belfast, Northern Ireland (Activity:

## Dr. Mohamed Khater's Resume

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Oral Presentation).

19. M A Khater, P V Kampen, J T Costello, J-P Mosnier and E T Kennedy, Comparison between Intensified Photodiode Array and Charge-Coupled Device Detectors in the Vacuum Ultraviolet for Laser-Induced Plasma Spectroscopy, *Appl. Spectrosc.* 55 (10), 1430-33 (2001).
20. M A Khater, The 7<sup>th</sup> European Conference on Atomic and Molecular Physics (ECAMP VII), April 2001, Berlin, Germany (Activity: Poster + Oral Presentations).
21. M A Khater, P V Kampen, J T Costello, J-P Mosnier and E T Kennedy, Time-Integrated Laser-Induced Plasma Spectroscopy in the Vacuum Ultraviolet for the Quantitative Elemental Characterization of Steel Alloys, *J. Phys. D: Appl. Phys.* 33, 2252-62 (2000).
22. M A Khater, The 2<sup>nd</sup> Training School on Plasma Technology, June 2000, Buxton-England (Activity: Poster Presentation).
23. M A Khater, Reference Materials and Quality Procedures for Composition Determination, February 2000, London, England (Activity: Oral Presentation).
24. M A Khater, the 14<sup>th</sup> European Conference on the Atomic and Molecular Physics of Ionized Gases (ESCAMPIG XIV), August 1998, Dublin, Ireland (Activity: Poster Presentation).
25. M A Khater, M A Eid, N Barakat, A A Shalaby and K A Eid, ICP-AES Determination of Wear Metals in Used Lubricating Car Oils, *Mans. Sci. Bull.* 24 (1), 107-121 (1997).

### **INVITED SEMINARS / TALKS:**

- Key Factors in Students Failure and How to Address Them, December 2009, University of Central Lancashire, Preston, UK.
- Optics & Lasers: Present, Past and Future, January 2005, Ministry of Education, Cairo, Egypt.
- Recent Developments and Advantages of Laser-Produced Plasma Sources for Materials Characterization, July 2004, Xtreme Technologies GmbH, Jena, Germany.
- Hot LIPS in Focus, April 2001, the 7th European Conference on Atomic and Molecular Physics (ECAMP VII), Berlin, Germany.
- Plasma Excitation Sources for Trace Elemental Characterization of Liquids Using Atomic Spectroscopic Techniques, February 1998, Physics Department, Dublin City University, Dublin, Ireland.

# Dr. Mohamed Khater's Resume

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## **REVIEWING:**

- MSc thesis submitted to King Saud University.
- Research project submitted to KACST.

## **SELECTED AWARDS & GRANTS:**

The principal investigator for the following peer reviewed research projects (All referred in the USA) awarded most recently:

- "Development of a Laser-Generated Plasma Source for Improving Quantification of Light Elements in Steel Alloys" – Budget awarded: 550 k\$.
- "Development of Chitosan Blends as Bio-Substituted Materials" – Budget awarded: 100 k\$.
- "Biophysical Study for Surface Modification of Fenugreek Seeds" – Budget awarded: 100 k\$.

## **INTERNATIONAL ACTIVITIES:**

- Participating in the novel experiments carried out at the Synchrotron Radiation Facility (L.U.R.E.) in Orsay, France, for a total period of six months during 1999 / 2000.

## **PROFESSIONAL SOCIETIES:**

- Member of the Institute of Physics (MInstP), London.
- Chartered Physicist (CPhys) of the Institute of Physics, London.

## **SUMMARY OF ADMINISTRATION DUTIES:**

- A member of the "appointment and contract" committee.
- A member of the "scientific" committee.
- A member of the "quality and evaluation" committee.
- A member of the "curriculum evaluation and development" committee.
- A member of the "education process monitoring" committee.

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