



## College of Arts and Applied Sciences

**Full Name: Israr UI Hassan**



**PO Box 2509, PC 211**

**Salalah,**

**Oman**

**Telephone: +968 23225061 Ext. 324**

**Email: [i\\_hassan@du.edu.om](mailto:i_hassan@du.edu.om)**

### **EDUCATION:**

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|-------------------|---|
| 10/1997 – 09/2001 | Ph.D in Chemistry<br>Thesis title: - Bias Enhanced Nucleation of Diamond deposited using Hot Filament Chemical Vapour Deposition. The project involved the design and construction of a deposition system. This system was used to study the fundamental science behind BEN of HFCVD. diamond films. A number of analysis techniques were used to characterise the diamond films. These included Scanning Electron Microscopy, Atomic Force Microscopy, Lateral Force Microscopy, X-ray Diffraction, Raman Spectroscopy and Surface Profilometry. |
| 10/1996 - 10/1997 | MSc by Research in Quality Assurance Applied Chemical Analysis<br>Determination of Strontium in Water at low concentrations by ICP AES.   |
| 09/1993 - 07/1996 | BSc (Hons) Chemistry  |

### **EXPERIENCE:**

02/2006 – to date	Assistant Professor of Chemistry at Dhofar University, College of Arts & Applied Sciences, Maths and Sciences Unit. Salalah, Oman. Additional responsibilities include course coordinator for the MATH. 103 course (Fall 2008).
06/2002 – 12/2006	Assistant Professor at Oman Medical College (in academic partnership with West Virginia University), Bausher Campus, Muscat, Oman. Additional Responsibilities: Course Coordinator (Jan. 2003) for Epidemiology and Oman Public Health Short Course
09/2001 – 05/2002	Lecturer at Manchester College of Arts and Technology, One Central Park, Northampton Road, Moston, Manchester M40 5WR, UK.
09/1998 – 07/2001	Lecturer at Stockport College of Higher and Further Education, Stockport

## TEACHING

### Frequently taught courses:

- Math for the Social Sciences (MATH 103)
- Chemistry for the Arts (CHEM. 100)
- Biology for the Arts (BIOL. 100)
- Chemical Principles I (CHEM. 130)
- Chemical Principles II (CHEM. 170)
- Chemistry Principles I Laboratory (CHEM. 130L)
- Fundamentals of Physics I (PHYS. 170)
- General Chemistry I
- General Chemistry II
- General Chemistry Lab I
- General Chemistry Lab II
- Descriptive Statistics
- Organic Chemistry I
- Organic Chemistry Lab I
- Physics I
- Physics II including Laboratory component.
- Medicinal Chemistry I
- Medicinal Chemistry II

## RESEARCH

### Research Interest:

- My research work involves working with Nanomaterials and diamond coatings for use in various applications such as biomaterials.
- Chemical Vapor Deposition of Diamond Film deposited on various surfaces.

### **Research Projects:**

- 01/2006 – 08/2007 Visiting Researcher at University of Ulster, School of Electrical and Mechanical Engineering.  
Project title: Chemical Vapor Deposition of Diamond Thin Films for Biomedical Applications.
- 09/01/2002 – 08/2003 Visiting Research Associate, Manchester Metropolitan University, Department of Chemistry and Materials, John Dalton Building, Chester Street, Manchester M1 5GD, England.  
Collaborative research projects relating to Chemical Vapor Deposition of Diamond Film deposited on various surfaces.

## **PUBLICATIONS**

### **I. Articles in Refereed Professional Journals:**

- [1] "Deposition of Synthetic Diamond Films: PVD, CVD and Multiplexed Lasers", N. Ali, W. Ahmed, I. U. Hassan and C. A. Rego, Surface Engineering, Vol. 14, No.4, (1998), pp 292-294.
- [2] "An Investigation of the Structural Properties of Diamond Films Deposited by Pulsed bias-enhanced hot-filament CVD", I. U. Hassan, C. A. Rego, N. Ali, W. Ahmed and I. P. O'Hare, Thin Solid Films, 353 (1999), pp 134-138.
- [3] "Role of Surface Pre-treatment in the CVD of Diamond Films on Copper", N. Ali, Q. H. Fan, W. Ahmed, I. U. Hassan, C. A. Rego and I. P. O'Hare, Thin Solid films, Vol. 355/356, (1999), pp 162-166.
- [4] "CVD Diamond: Controlling Structure and Morphology", W. Ahmed, C. A. Rego, A. Afzal, N. Ali, I. U. Hassan and R. Cherry, Vacuum, Vol. 55, (1999), pp 1-5.
- [5] "Acoustic Emission Analysis of Wear in Hacksaw Blades" W. Ahmed, M. K. Farooq, I. U. Hassan and N. Ali, Surface Engineering, Vol. 15, No.5, (1999), pp 423-426.
- [6] "Optimising diamond nucleation density by combining surface pre-treatments", N. Ali, W. Ahmed, Q. H. Fan, I. U. Hassan and C. A. Rego, Thin Solid Films, 377- 378 (2000) 208-213.
- [7] "Significance of Substrate temperature on the properties of flash evaporated  $\text{CuIn}_{0.75}\text{Ga}_{0.25}\text{Se}_2$  thin films", E. Ahmed, R. D. Tomlinson, R. D. Pilkington, A. E. Hill, W. Ahmed, N. Ali and I. U. Hassan, Thin Solid Films, 335 (1998), pp 54-58.
- [8] "Friction force microscopy study of diamond films modified by a glow discharge treatment", B. D. Beake, I. U. Hassan, C. A. Rego and W. Ahmed, Diamond and Related Materials, 9 (2000), pp 1421-1429.
- [9] "Chemical vapour deposition of microdrill cutting edges for micro- and nanotechnology applications", H. Sein, W. Ahmed, I. U. Hassan, N. Ali, J. J. Gracio and M. J. Jackson, J. Mater. Sci., (2002), pp5057-5063.

[10] 'The impact of Inert Gases on the Structure, Properties and Growth of Nanocrystalline Diamond', A. N. Jones, W. Ahmed, I. U. Hassan, C. A. Rego, H. Sein and M. Amar, J. of Physics, Condensed Matter, (2003) volume 15, issue 39, pp S2969-S2975.

[11] 'Pulsed Biased Growth of Nanocrystalline Diamond by Hot Filament Chemical Vapour Deposition', A. N. Jones, W. Ahmed, I. U. Hassan, H. Sein and C. A. Rego, .Surface Engineering, (2004) volume 20, no. 3, pp 181-185(5)

[12] 'Enhancing Nucleation Density and Adhesion of Polycrystalline Diamond Films Deposited by HFCVD using Surface Treatments and Co Cemented Tungsten Carbide', H. Sein, W. Ahmed, M. Jackson, R. Polini, I. U. Hassan, M. Amar, and C. Rego, Diamond and Related Materials, (2004), volume 13, Issues 4-8, pp 610-615

[13] 'Transmission photoacoustic spectroscopy of flash-evaporated  $\text{CuIn}_{0.75}\text{Ga}_{0.25}\text{Se}_2$  thin films', E. Ahmed, R.D. Pilkington, A.E. Hill, N. Ali, W. Ahmed and I.U. Hassan, Thin Solid Films, (2006), 515, pp 239-244.

[14] "Hot-filament chemical vapor deposition of polycrystalline diamond coatings to interlayered steel", M. Amar, W. Ahmed, H. Taylor, M. J. Jackson, I. U. Hassan, Journal of Materials Engineering and Performance, , No. 2, A S M, ISSN 1059-9495, (Apr 2006), Vol. 15, pp 187-191

### **III. Articles and Abstracts in International Conferences:**

[15] "Laying Down a Gem of a Surface", N. Ali, W. Ahmed and I. U. Hassan, Materials World, Vol. 6, No.6, June (1998), pp 348-350.

[16] "Developments in the Surface Engineering of Cutting Tools", W. Ahmed, N. Ali, I. U. Hassan and R. Penlington. Finishing, (1), (1998), pp 22-24.

[17] "The Performance of hard PVD and CVD Coatings on Cutting Tools", W. Ahmed, N. Ali, I. U. Hassan, S. R. Bradbury and M. J. Ackroyd, Finishing, Sept. (1998), 22 (9) pp 24-26.

[18] "Trends in Surface treatment of materials", W. Ahmed, N. Ali and I. U. Hassan, Annual Journal of Materials Engineers (Malaysian), Vol. XIX, (1999) pp 31-37.

[19] "Effects of Pulse Biasing on the morphology of Diamond Films grown by Hot Filament CVD", B. D. Beake, I. U. Hassan, C. A. Rego, and W. Ahmed, 6<sup>th</sup> International Symposium on Advanced Materials, Islamabad, Pakistan, (1999) pp 480-484.

[20] "Enhancing Nucleation Density & Adhesion of Polycrystalline Diamond Films Deposited by HFCVD Using Surface Treatments on Cemented Tungsten Carbide, H. Sein, N. Ali, W. Ahmed, I. U. Hassan, and C. Rego, Proceedings of the 26th International Conference on Metallurgical Coatings and Thin Films, San Diego, CA, USA, (2002).

[21] 'Influence of pulse biasing on the morphology of CVD diamond films, I. U. Hassan, N. Brewer, C.A. Rego, W. Ahmed, B. D. Beake N. Ali & J. Gracio, 6<sup>th</sup> International Symposium on Advanced Materials, Islamabad, Pakistan, (2000).

[22] "Effects of Nucleation on the Crystallinity of Diamond Films Deposited by Hot Filament Chemical Vapour Deposition", I. U. Hassan, C. A. Rego W. Ahmed, and X. Li, Annual Institute of Physics Congress, 16th -19<sup>th</sup> March (1998), Brighton p16

[23] 'The effects of pulsed biased nucleation on the surface morphology of CVD diamond films", I. U. Hassan, N. Brewer, C. A. Rego, W. Ahmed and B. D. Beake, N. Ali and J. Gracio, Proc. New Developments on Tribology: Theoretical Analysis and Application to Industrial Processes, ISBN # 972-789-059-8, University of Aveiro, Portugal, May (2002) pp153-156.

[24] "Pulsed Biased Enhanced HFCVD of Diamond Films on Silicon", I. U. Hassan, C. A. Rego, B. D. Beake, W. Ahmed and N. Brewer, International Conference Metallurgical Materials & Thin Films, San Diego, California 12<sup>th</sup> April (2000).

[25] "Effects of Surface Pre-treatments on the Nucleation and Growth HFCVD Diamond Coatings", N. Ali, C. A. Rego, I. U. Hassan and W. Ahmed, International Conference Metallurgical Materials & Thin Films, San Diego, California 12<sup>th</sup>-15<sup>th</sup> April (1999) p10.

[26] "Improvements in the Properties and Structure of Diamond Films Deposited by Pulsed Bias Enhanced Hot Filament CVD", W. Ahmed, C A. Rego, I. U. Hassan and N. Ali, International Conference Metallurgical Materials & Thin Films, San Diego, California 12<sup>th</sup> April (1999) p23.

[27] "Superimposed Pulsed Bias Enhanced Deposit on of Hard Coatings by Plasma Cr and PVD Processes", B. D. Beake, I. U. Hassan, C. A. Rego and W. Ahmed, 6th International Symposium on Advanced Materials, Islamabad, Pakistan – Sept.(1999) pp 480-484, ISBN 969-8122-11-7.

[28] "The effect of pulsed biased nucleation on the surface morphology of CVD diamond films", I. U. Hassan, N. Brewer, C. A. Rego, W. Ahmed, N. Ali, H. Sein and B. D. Beake, 7th Int. Symposium on Advanced Materials, Islamabad, Pakistan 17th -21st Sept (2001) p134.

[29] "Nanocrystalline Diamond Films: Growth and Gas Phase Modeling Studies in Inert Gases", A.N. Jones, W. Ahmed, C.A. Rego, I.U. Hassan, M. J. Jackson, Proceedings of the 4th International Surface Engineering Congress, Minnesota, USA, August 1<sup>st</sup>-3<sup>rd</sup>, (2006) p253, ISBN: 0-87170-835-31.

[30] "Hot Filament CVD of Polycrystalline Diamond Coatings to Interlayered Steel", M. Amar, W. Ahmed, H. Taylor, M.J. Jackson, I.U. Hassan, Proceedings of the 4th International Surface Engineering Congress, Minnesota, USA, August 1<sup>st</sup>-3<sup>rd</sup>, (2006) p281. ISBN: 0-87170-835-31.

[31] "Titanium Based Nitride and Carbide Coatings for Diamond Deposition", M. Amar, W. Ahmed, H. Taylor, M.J. Jackson, I.U. Hassan, Proceedings of the 4th International Surface Engineering Congress, Minnesota, USA, August 1<sup>st</sup>-3<sup>rd</sup> (2006), p286. ISBN: 0-87170-835-31.

### **Poster Presentations**

[32] "Impact of Inert Gases on the Structure, Growth and Properties of Nanocrystalline Diamond deposited by Bias - Assisted HFCVD", A N Jones, I. U. Hassan, W. Ahmed, M Amar, H Sein and C A Rego Poster Number 05-05-14. 14th European Conference on Diamond, Diamond-like Materials, Carbon Nanotubes, Nitrides and Silicon Carbides, Salzburg, Austria, 7<sup>th</sup>-12<sup>th</sup> September (2003).

[33] "Impact of Inert Gases on the Structure, Properties and Growth of Nanocrystalline Diamond". A N Jones, I. U. Hassan, W. Ahmed, C. A. Rego, Physics of Group IV Semiconductors Workshop, University of Exeter, 7<sup>th</sup> -10<sup>th</sup> April (2003)/

### **Contributions to Other Work (Oral Presentations)**

[34] "Significance of Pulsed Biasing on the Growth and Properties of Nanocrystalline Diamond deposited through HFCVD", A. N. Jones, I. U. Hassan, W. Ahmed, M. Amar, H. Sein and C A Rego, Pulsed Plasma Processing, IOP and IOMMM Committee, University of Salford, 17 September (2003).

## COMMUNITY SERVICES

### I. Referee/Reviewer of Professional Publications:

Reviewed professional research articles for

- Editorial Board Member of the International Journal of Nanomanufacturing (IJNM)
- International Journal of Nano and Biomaterials (IJNBM)
- International Journal of Molecular Engineering (IJME)
- All journals published by Inderscience Enterprises Ltd, World Trade Center Building" 29 Route de Pre-Bois " Case Postale 896 " CH-1215 Genève 15, Switzerland, Fax: (UK) +44 1234-240515 Website: [www.inderscience.com](http://www.inderscience.com)

### II. Academic Committees:

- 'Accreditation Committee' responsible to ensure the college fulfils the criteria for accreditation at Oman Medical College.
- Admissions Committee at Oman Medical College.
- Academic & Professional Standards and Curriculum Committee at Oman Medical College.

### III. Training Workshops:

- Attended the regional workshop on Nanotechnology held on 13<sup>th</sup> 14<sup>th</sup> January 2008 at Sultan Qaboos University. The workshop was held to help develop a regional nanotechnology directive which also included distinguished speakers from the field of nanotechnology as well as demonstrations of using various characterization techniques such as AFM and STM.