

# Bashar Issa, PhD

## Short CV

### Education

- 1989 - 92 PhD in Magnetic Resonance Imaging, Department of Physics, University of Nottingham, UK. **Supervisor Sir Professor P. Mansfield, Nobel Prize Laureate in Physiology or Medicine, 2003.**
- 1987 - 89 Postgraduate research at the Department of Electrical and Electronic Engineering (Digital Filter Design at the Signal Processing Section), Imperial College of Science, Technology and Medicine, London, UK.
- 1984 - 87 BSc Joint Honours in Electronic Engineering & Mathematics; Department of Electrical and Electronic Engineering, and Department of Theoretical Mechanics, University of Nottingham, UK.
- 1982 - 84 GCSE (A-Levels), The British School in the Netherlands, Voorschoten, Holland.
- 1980 - 82 Al-Mansoor Secondary School, Al-Mansoor, Baghdad, Iraq.

### Employment History

- 9/2018- Professor, Department of Medical Diagnostic Imaging, College of Health Sciences, University of Sharjah, UAE.
- 9/2014 – 8/2018 Professor, Department of Physics, College of Science, University of UAE, UAE.
- 12/2010 – 1/2011 Visiting Professor, Center for Research Excellence in Nanobiosciences, University of North Carolina at Greensboro, NC, USA.
- 9/2004 – 8/2014 Associate Professor, University of UAE, Al-Ain, UAE.
- 9/1998 – 8/2004 Assistant Professor, University of UAE, Al-Ain, UAE.
- 5/1996 – 8/1998 Assistant Professor, Hull University, Hull, UK; and Senior Physicist, Centre of MRI, Hull Royal Infirmary, Hull, UK.
- 11/1992-4/1996 Postdoctoral RA, Nottingham University, Nottingham, UK.

### Professional Activities

Researcher  
Journal Editor and Reviewer  
Examiner  
Conference Organizer

### Professional Memberships

1. International Society for Magnetic Resonance in Medicine - since 1992.
2. Emirates Medical Physics Society (2006-2012): Elected President (2006/7 and 2007/8) and a founding member in 2006. Elected President in 2009/10.

## **Selected Research Projects**

Development of Magnetic Nanoparticles as MRI Contrast Agents and Hyperthermia Agents.

Quantitative Susceptibility Imaging.

Studying Models of Vessel Topology Effects on MRI Signal Simulations

## **Selected Publications**

1. Reduction of T2 Relaxation Rates due to Large Volume Fractions of Magnetic Nanoparticles for all Motional Regimes. B. Issa. *Applied Sciences* 8:101 (2018).
2. Misconceptions Encountering Introductory-Physics Students About Charges and Gauss's Law. Nacir Tit, Bashar Issa, I. M. Obaidat. *International Journal of Social Science and Technology* 3:1(2018).
3. MRI Simulation Study Investigating Effects of Vessel Topology, Diffusion, and Susceptibility on Transverse Relaxation Rates Using a Cylinder Fork Model. M. Salman Shazeeb, Jayashree Kalpathy-Cramer, Bashar Issa. *Scientific Reports* 7:16223 (2017); DOI:10.1038/s41598-017-15968-4.
4. Magnetic Properties of Magnetic Nanoparticles for Efficient Hyperthermia. I. M. Obaidat, B. Issa, Y. Haik. *Nanomaterials* 5(1):63-89 (2015);
5. NMR Relaxation in Systems with Magnetic Nanoparticles: A Temperature Study. B. Issa, I. M. Obaidat, R. H. Hejasee, S. Qadri, Y. Haik. *Journal Magnetic Resonance Imaging* 39:648-655 (2014).
6. Magnetic Nanoparticles: Surface Effects and Properties Related to Biomedicine Applications. B. Issa, I. M. Obaidat, B. A. Albiss, and Y. Haik. *International Journal of Molecular Sciences*, Invited Review, 14:21266-21305 (2013).
7. Thermally Reversible Nanoparticle Aggregation Explains Magnetic Moment Increase with Temperature. B. Issa, I. M. Obaidat, S. Qadri, T. Abdulrehman, Y. Haik. *Current Nanoscience* 9(3):381-386 (2013).
8. Simulation Packages or Programming as Teaching Tools in Medical Physics. B. Issa. *eMPW (Electronic Medical Physics World – non peer-reviewed journal published by International Organization of Medical Physics – IOMP, Volume 2 Number 2 December, 2011)*.  
[http://www.iomp.org/sites/default/files/empw-vol2number2\\_december2011.pdf](http://www.iomp.org/sites/default/files/empw-vol2number2_december2011.pdf)
9. PEG Coating Reduces NMR Relaxivity of New Mn<sub>0.5</sub>Zn<sub>0.5</sub>Gd<sub>0.02</sub>Fe<sub>1.98</sub>O<sub>4</sub> Nanoparticles. B. Issa, S. Qadri, I. M. Obaidat, R. W. Bowtell, Y. Haik. *Journal of Magnetic Resonance Imaging*, 34:1192-1198 (2011).
10. Quantification of Blood Velocity and Flow Rates in the Uterine Vessels Using Echo Planar Imaging at 0.5T. B. Issa, R.J. Moore, K.R. Duncan, R.W. Bowtell, P.N. Baker, I.R. Johnson, B.S. Worthington, P.A. Gowland. *Journal of Magnetic Resonance Imaging*, 31:921-927 (2010).
11. Medical Physics Education and Training: Regional and International Challenges. B. Issa. *International Federation for Medical and Biological Engineering (IFMBE) Proceedings 25/XII*, pp. 204–207 (2009).
12. Design of Self-Refocused Pulses under Short Relaxation Times. B. Issa. *Journal of Magnetic Resonance* 191(2):151-159 (2009).

13. Improved Discrimination of Breast Lesions Using Selective Sampling of Segmented MR Images. B. Issa. Magnetic Resonance Materials in Physics, Biology and Medicine, 19(1):34-40 (2006).
14. In Vivo Measurement of the Apparent Diffusion Coefficient of Normal and Malignant Prostatic Tissues Using Echo-Planar Imaging. B. Issa. Journal Magnetic Resonance Imaging 16:196-200 (2002).
15. In Vivo Intravoxel Incoherent Motion Measurements in the Human Placenta using Echo-Planar Imaging at 0.5 T. R. Moore, B. Issa, P. Tokarczuk, K. Duncan, P. Boulby, P.N. Baker, R. Bowtell, B.S. Worthington, I.R. Johnson, and P.A. Gowland. Magnetic Resonance in Medicine 43:295-302 (2000).
16. Heterogeneity Analysis of Gd-DTPA uptake: Improvement in Breast Lesion Differentiation. B. Issa, D. L. Buckley and L.W. Turnbull. Journal Computer Assisted Tomography 23:615-621 (1999).

### **Theses and Projects Supervision**

Three PhD and four MSc studies

### **Awards Recognitions**

1. Certificate of Achievement for Publishing in a Top Journal for Academic Year 2014/15, and 2017/18.
2. Distinguished Faculty Services Award (Rank: first) for the Academic Year 2005/6.
3. Scientific Research Distinction Award - Faculty Level, UAE University (2000/1).
4. PhD Scholarship, Department of Physics, University of Nottingham, England (1989).
5. Overseas Research Studentship (ORS), The British Council, Imperial College, London (1987).
6. Mathematics Subject Award, The British School in the Netherlands (1984).

### **Services**

Workshops and Courses in MRI and MATLAB

Conference Organization.

### **Teaching Philosophy**

Question, Answer, and Justify.

Self-learning

### **Contact**

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