

Personal Data

Name: Rafat Mohamed Ibrahim

Nationality: Sudanese

Date of Birth: April 11th, 1973

Place of Birth: Elhasahessa, Sudan

Marital status: Married with one child

Languages: Arabic and English.

Web-page: <http://staffcv.uofk.edu/Science/rafat/>

Field of research: Experimental Condensed Matter Physics, Materials Science and Nanotechnology.

Contact

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Education and Employment Information

Education

- 2006 – Ph.D. (Experimental Condensed Matter Physics) University of Sheffield, (UK).
- 2003 – M.Sc. (Physics), Norwegian University of Science and Technology, (Norway).
- 1999 – B.Sc. in Physics (First Class Honours), Khartoum University, (Sudan).

Employment

1. Part-time Demonstrator, Physics Department, Faculty of Science, University of Khartoum, 1999.

1. Teaching Assistant: Physics Department, Faculty of Science, University of Khartoum, 1999-2003.
1. Lecturer: Physics Department, Faculty of Science, University of Khartoum, 2003-2006.
1. Assistant Professor: Physics Department, Faculty of Science, University of Khartoum, 2006- july 2010.
1. Assistant Professor: Physics Department, Nile College, Sudan, 2007-presnt (on a part-time contract).
2. Associate Professor: Physics Department, Faculty of Science, University of Khartoum, july 2010-presnt.

Awards and Professional Recognition

Awards

1. A Quota Program M. Sc. scholarship, Norwegian University of Science and Technology, (Norway), 2000-2002.
1. United Kingdom Engineering and Physical Science Research Council (EPSRC) Ph.D. scholarship, University of Sheffield, (UK), 2003-2006
1. Gordon Memorial College Trust Fund Scholarship (UK), 2006.
1. Staff Research Incentive Award, University of Khartoum, 2007.

Membership of Professional Organizations

- Chartered Physicist (CPhys), Institute of Physics, UK, January 2011-present.
 - Corporate Member of the Institute of Physics (MInstP), UK, November 2009-present.
1. Associate Member of the Institute of Physics, London, UK, 2004-2007.
 1. Member of the Arab Materials Science and Nanotechnology Network (AMSN) Sharjah, UAE, 2009-present.
 1. Member of the African Laser Centre, South Africa, 2007 -present.
 1. Member of the African Nanosciences Network (NANOAFNET), 2007-present.
 2. Member of the Arab Science and Technology Foundation (ASTF), UAE, 2007 -present.
 1. Member of Australian Materials Network, 2007-2009.
 1. Member of the Nanotechnology Committee, Sudan Institute for Natural Sciences, Ministry of Higher Education and Scientific Research, Sudan, 2008-present.

I have applied for the Associate Membership of the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy.

Teaching

1. Courses taught at undergraduate level (Department of Physics, Faculty of Science, Khartoum University):

1. General Physics
2. Electricity and Magnetism

iii. Optics

iv. Thermodynamics

1. Solid State Physics
2. Final Year Project
3. First Year Experimental Physics.

2. Courses taught at undergraduate level (Khartoum University):

Physics for preliminary year Engineering, Pharmacy, Dentistry and Medical students, University of Khartoum (2007-2009).

3. Courses taught at undergraduate level (Nile College):

- i. Medial Physics
- ii. Physics for Laboratory Sciences

Administrative and other teaching-related duties

- Head of the Physics Department, Faculty of Science, University of Khartoum, September 2011-present.
- Head of the Physics Department, Nile College, Sudan, October 2007-present.
- Acting Head, Department of Physics, Faculty of Science, University of Khartoum, September -November 2009.
- Secretary Departmental Board of Physics, University of Khartoum, March 2007-present.
- Member of the Scientific Board of Nile College, 2008-present.
- Member of the Organizing Committee of the Workshop on Asteroid 2008TC3, University of Khartoum, Dec 5-15, 2009.
- Examination officer for the Physics Department, University of Khartoum.

- Time-table officer for the Physics Department, University of Khartoum, 2009-present.
- Supervisor for 1st year Physics Laboratory for the students of the Faculty of Science, University of Khartoum, November 2008-present.
- Supervisor for Physics Library, Physics Department, Faculty of Science, University of Khartoum, June 2007-present.
- Supervisor for 1st year Physics Laboratory for the students of Engineering, Pharmacy, Dentistry and Medicine, University of Khartoum (2007-2009).
- I am a member of several committees of the Faculty of Science, U. of K. (e. g. Students Support Committee, Academic Supervision Committee, Sports Committee, Environment Promotion Committee).
- I have also acted as an internal examiner for 8 M.Sc. degrees (physics) at U. of K. and as external examiner for 2 M. Sc.
- Supervisor for 2 M. Sc. Students.
- Supervisor for a PhD. Student.

Scholarly Achievements

1- Research Interests

Synthesis and Characterisation of magnetic oxide (bulk and nanoparticles; pure and doped). I mainly worked on measuring the magnetic and electrical properties of thin film samples grown by pulsed laser deposition. Of special interest to us was the possible application of these materials in Spintronics. Our research involved extensive use of XRD, SQUID, XPS, and TEM.

2- Research Grants

I have got an internal research grant at U. of K. to carry out a research project involving the synthesis, structure, magnetic and electrical properties of materials similar to those mentioned in the previous section. One special facility available at U. of K. that can be used in this research is Mössbauer spectroscopy.

3- Conference Participation (Oral presentation and Posters):

1. Joint Meeting of the Engineering and Physical Sciences Research Council Network on Magnetic Oxide and Perovskite, Burton Manor, UK, October 2003.
2. Condensed Matter and Materials Physics Conference (CMMP 2004), Institute of Physics, University of Warwick, UK, April 2004.
3. Spintronics and Nanomagnetism Meeting, Institute of Physics, London, UK, 2005.
4. First Sharjah International Conference on Nanotechnology and Its Applications, The American University of Sharjah, Sharjah UAE, April 2007.
5. The African Regional College on Science at the Nanoscale, Cape Town, South Africa, 19-30 November 2007.
6. Regional Workshop on Nanotechnology, Oman, Muscat, January 2008.
7. The 5th Congress of Scientific Research Outlook in the Arab World -Scientific Innovation and Sustained Development, Fez Morocco, October 2008.

4- Scientific Research Visits:

1. The Magnetism Research Group of Professor J. M. D. Coey, Physics Department, Trinity College, Dublin 2, Ireland, 2004.
2. The Magnetism Research Group of Professor S. M. Thompson, Physics Department, University of York, York, UK, 2005.
3. The Magnetism and Mössbauer Research Group, Physics Department, Sultan Qaboos University, Muscat, Oman, 2008.

List of Publications

1. Mechanical alloying: a route to room-temperature ferromagnetism [in bulk \$\text{Zn}_{1-x}\text{Mn}_x\text{O}\$](#) , H.J. Blythe, **R.M. Ibrahim**, G.A. Gehring, J.R. Neal and A.M. Fox, J. Magn. Magn. Mater. **283**, 117 (2004).
2. Magneto-optical Hysteresis of Room Temperature Magnetism in doped ZnO, J.R. Neal, A.J. Behan, **R.M. Ibrahim**, H.J. Blythe, A.M. Fox, and G.A. Gehring, Phys. Rev. Lett. **96**, 197208 (2006).
3. Carrier-induced ferromagnetism in n-type ZnMnAlO and ZnCoAlO thin films at room temperature, X.H. Xu, A.J. Behan, H.J Blythe, **R.M. Ibrahim**, G.A. Gehring and M. Ziese, New J. Phys. **8**, 135 (2006).
4. Magneto-Optical Studies of Magnetic Oxide Semiconductors, G.A. Gehring, A.J. Behan, H.J Blythe, A.M. Fox, **R.M. Ibrahim**, A. Mokhtari and J.R. Neal, Spintronic Materials and Technology ,ISBN:0849392993,2006.
5. Magneto-optical and transport studies of ZnO-based dilute magnetic semiconductors, A.J. Behan, J.R. Neal, **R.M. Ibrahim**, A. Mokhtari, H.J Blythe, A.M. Fox, , M. Ziese and, G. A. Gehring, J. Magn. Magn. Mater **310**, 2158 (2007).
6. Room Temperature Magneto-optics Of Ferromagnetic ZnO Doped With Transition Metals And Aluminum, J.R. Neal, X.H. Xu, , A.J. Behan, **R.M. Ibrahim**, H.J Blythe, M. Ziese, A.M. Fox and G.A. Gehring, American Institute of Physics, Volume 893, pp. 1189, April 10, 2007.
7. Carrier-density dependence of magnetic moment in Al co-doped ferromagnetic ZnO films, X.H. Xu, A.J. Behan, H.J Blythe, **R.M. Ibrahim**, G.A. Gehring and M. Ziese (to be published).