Mouath Ghazi Shatnawi

CURRICULM VITAE

PERSONAL

Date of Birth**:** 08/23/1973
Work Address:
Department of Physics
Hashemite University
Zarqa, Jordan
Email:
shatnawi@hu.edu.jo
mshatn@yahoo.com
Phone:00962-0799584222

Education:

2001- 2007

Michigan State University, USA

Master degree of Physics

Doctor of Philosophy (Physics)

Thesis title: **Local structure of Intercalants and Host Nanoporous Materials**

Research Experience:

- X-ray diffraction
- Pair Distribution Function analysis and development
- Parametric studies using PDF method
- Structure solution of materials
- Nanoporous and nanostructured materials analysis

1996-2000

Al alBayet University, Jordan

Master degree of Arts and Science (*physics*):

Thesis Title: **Relaxation Mechanisms at low Temperatures for fine magnetic particle systems**

Research Experience:
- Relaxation mechanisms (Macroscopic Quantum tunneling and thermal relaxation)
- Modeling of magnetic loops
- Use Fortran to construct physical models

1991- 1995

Yarmouk University, Jordan

Bachelor of Science (*physics*)

Experiences:

- **Associated professor at Hashemite university from 2016-now**
- **Visiting professor at Columbia university for three months in 2013**
- **Teaching Assistance at Al alBayet university (Jordan) 2000-2001:**
  - Teaching first year undergraduate physics courses
  - Teaching some labs
- **Teaching and research assistance at Michigan State University 2001-2007**
  - Teaching different level physics labs
  - Tutoring students in different undergraduate courses
  - Coordinating and preparing beamline proposals for the Advanced photon source (APS) national laboratory

Courses Teaching Experience:

I have the ability to teach all physics courses of different levels below is a sample of some courses that I have taught:

General physics courses:

- General physics for scientists and engineers
- General physics for medicine students
- General physics for geology students
- General physics Lab (I and II)

Physics courses for undergraduate students:

- Material Science
- Modern Physics (I and II)
- Solid State Physics
- Electricity and Magnetism
- Statistical Mechanics
- Thermal Physics
- Thermodynamics
- Advanced Physics Lab (I and II)

Physics courses for master students:

- Solid state physics
- Classical Physics

Fellowships:

1. June 11, 2013- September 12, 2013, International Atomic Energy Agency (IAEA) fellowship, Vienna, Astoria in collaboration with the Brookhaven National Laboratory, New York, USA.

2. June 11, 2013- August 26, 2011, International Atomic Energy Agency (IAEA) fellowship, Vienna, Astoria in collaboration with the Brookhaven National Laboratory, New York, USA.

Current research work:

My current research work is focused on the following subjects:

- Structural, Optical and Magnetic properties of diluted magnetic semiconductors.
- Pair Distribution Function (PDF) method a study of pyrolization temperature effect on the nanoporous carbon (NPC) structure.
- Pair Distribution Function (PDF) method a study of nanoporous carbon (NPC) structure prepared by different methods.
- Preparing samples using hydrothermal method.
- Preparing samples using solid state reaction method.
- Supervising master students.

References:

(1) Prof. Simon Billinge
Applied Physics & Applied Mathematics
Columbia University
500 West 120th Street
Room 200 Mudd, MC 4701
New York, NY 10027
Tel: (212)-854-2918 (o) 851-7428 (lab)
Condensed Matter Physics and Materials Science Dept.
Brookhaven National Laboratory P.O. Box 5000
Upton, NY 11973-5000 (631)-344-3594
Emails: sb2896@columbia.edu
simon.billinge@gmail.com Home: http://bgsite.apam.columbia.edu

(2) Prof. Mohammad El-Hilo
Chairman of Physics Department,
College of Science,
University of Bahrain
P.O. Box.32038, Sakhir, Bahrain.
Tel: 973-39202656 (M),
Emails: melhilo@gmail.com,
malhelo@uob.edu.bh

(3) Prof. Thomas J. Pinnavaia
University Distinguished Professor
Michigan State University
435 Chemistry Building
East Lansing, MI 48824-1322
Phone: 517-432-1222
FAX: 517-432-1225
Email:
Pinnavaia@chemistry.msu.edu

Publications:

1- Nonpercolative nature of the metal-insulator transition and persistence of local Jahn-Teller distortions in the rhombohedral regime of $La_{1-x}Ca_xMnO_3$, Emil S. Bozin, J. F. Mitchell, Simon J. L. Billinge**,** Physical Review B, **93** (2016), 165138-165148

2- Magnetic Influence of Mn doping on the magnetic and optical properties of ZnO nanocrystalline particles Mouath Shatnawi, Abdel Alsmadi, I. Bsoul, B. Salameh, M. Mathai, G. Alnawashi, Gassem M. Alzoubi, F. Al-Dweri, M. S. Bawa'aneh**,** Submitted to Results in physics

3- Magnetic and optical properties of Co-doped ZnO nanocrystalline particles M. Shatnawi, A.M. Alsmadi, I. Bsoul, B. Salameh, G.A. Alna'washi, F. Al-Dweri, F. El Akkad**,** Journal of Alloys and Compounds 655 (2016) 244-252

4- Thermodynamics of a repulsive and attractive harmonically-trapped one-dimensional atomic Bose gas, M.K. Al-Sugheir and F.M. Al-Dweri and G. Alna'washi and M.G. Shatnawi, Physica B: Condensed Matter, 408(2013), 0921-4526

5- Bose- Einstein Condensation of Hard Sphere Homogeneous Gas in Static Fluctuation Approximation, M. K. Al-Sugheir, S. S. Gasymeh, M. Shatnawi and **M. S Bawa'aneh,**Acta Physica Polonica A, **116**, 154 (2009).

6- Multistream instability in two and three-species plasmas, M.S. Bawa'aneh, Ghada Assayed, Mouath Shatnawi, Ghassan Alna'washi and S. Al-Awfi, Jordan Journal of Physics, **2**(2), 113 (2009).

7- Structural characterization of the clay mineral illite-1M, A. F. Gualtieri, S. Ferrari, M. Leoni, G. Grathoff, R. Hugo, M. Shatnawi, G. Paglia and S. Billinge. *J. Appl. Cryst.* (2008). **41**, 402-415

8- Structure Study of novel alkali metal intercalated silica gel materials with potential as hydrogen source Mouath Shatnawi, G.paglia, J.L. Dye, S. J. L. Billinge**,** *J. Am. Chem. Soc.,* 129 (5), 1386 -1392 (2007)

9- Mercury Binding Sites in Thiol-Functionalized Mesostructured Silica. Simon J. L. Billinge, Emily J. McKimmy, Mouath Shatnawi, HyunJeong Kim, Valeri Petkov, Didier Wermeille, and Thomas J. Pinnavaia. *J. Am. Chem. Soc.,* **127** (23), 8492 -8498 (2005).

10- Modeling of interaction effects in granular systems. El-Hilo M., Shatnawi M., Al-Rsheed A. *Journal of Magnetism and Magnetic Materials*, 221 (1), 137-148 (2000).