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Dr. Ala'a A. A. Azzam

Assistant Professor of Atomic and Molecular Physics
The founder of AstroJo Institute



Education

- 2013 Ph.D Atomic and Molecular physics, University Collage London, UK.
Thesis title: “ A line list for hydrogen sulphide molecule ”, Supervision of Prof Jonathan Tennyson.
- 2005 M.Sc. in Physics, Yarmouk University, Jordan.
- 2002 B.Sc. in Physics, Jordan University of Science and Technology, Jordan.

Professional Experience

Administrative and Academic Positions

- 2014-Present Assistant professor of physics, Physics Department, The University of Jordan, Amman.
- 2015-2016 Dean's Assistant for Quality Assurance and Development Affairs, Science School, The University of Jordan, Amman.
- 2013-Present Member in many Committees at the physics Department, Science School and the University of Jordan.
- 2006-2010 Lecturer, Physics Department, the University of Jordan, Amman.

Initiatives

- 2017-Present Founder of AstroJo Institute which aims to promote education and research in astronomy and space sciences in Jordan. The AstroJo Institute aims to build capacity in space science in Jordan. AstroJo has established research

collaboration with (1) Harvard-Smithsonian Center for Astrophysics (CfA) which has so far trained 18 students in exoplanet detection using the transit method; (2) Harvard/CfA on training 7 students to analyse about 300,000 stars scanned by Kepler telescope as a preliminary stage for further analysis using TESS data; (3) Tennyson's group at UCL who run the ExoMol project computing molecular line lists for exoplanets and other hot atmospheres. The collaboration will be expanded as part of the current project.

2017-Present Founder "The Cambridge-Amman Seminar Project on Astrophysical Research (CASPAR)", a distance-learning educational initiative to provide promising young Jordanian scientists with an opportunity to develop research skills in astronomy and astrophysics. CASPAR is a collaboration between The University of Jordan (JU) and the Harvard-Smithsonian Centre for Astrophysics (CfA) that started in January, 2017 by Dr. Ala'a Azzam, Dr. Nancy Brickhouse and Dr. Andrew Szentgyorgyi. Dr. Azzam is member of the University of Jordan Department of Physics faculty and Drs. Brickhouse and Szentgyorgyi are research scientists at the CfA.

2017-2018 Initiated, oversaw a project for "Newtonian telescopes making" at the University of Jordan in collaboration with the Jordanian Astronomical Society.

Teaching

Undergraduate

Freshman physics	General Physics I, II and their labs (PHS 101, PHS 102, PHS 111, PHS 112).
Sophomore physics	Modern Physics (261); Mathematical Physics I (PHS 281); Mathematical Physics II (PHS 282); Practical Physics-3 (211).
Junior physics	Quantum Mechanics (361); Practical Physics-4 (311).
Senior physics	Atomic and Molecular Physics (462); Astrophysics (464); Research Project and Methods of Teaching Physics (499); Practical Physics-5 (411); Astrophysics (464).

Computer skills

1. Proficiency with Linux.
2. Proficiency with Windows.
3. Programming using FORTRAN language.
4. Latex Language. IRAF (software system for the reduction and analysis of astronomical data),
5. DVR3D (Molecular Calculations software)

Grants & Funding

2010-2013	The University of Jordan Grant for the Ph.D degree.
2015(4 months)	Grant from King Abdullah II fund for Development (KAFFD) in collaboration with King Abdullah II Design & Development Bureau (KADDB), for innovative undergraduate university projects. The project title "Building a machine for telescope mirrors grinding".
2015(4 months)	Grant from King Abdullah II fund for Development (KAFFD) in collaboration with King Abdullah II Design & Development Bureau (KADDB), for innovative

undergraduate university projects. The project title “Newtonian Telescope making”.

Publications

1. Ala'a A. A. Azzam, Sergei N. Yurchenko, Jonathan Tennyson, Marie-Aline Martin-Drumel and Olivier Pirali, Terahertz spectroscopy of hydrogen sulphide, *Journal of Quantitative Spectroscopy & Radiative Transfer*, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 130, November 2013, Pages 341-351.
2. Ala'a A. A. Azzam, Lorenzo Lodi, Sergei N. Yurchenko, Jonathan Tennyson, The dipole moment surface for hydrogen sulfide H₂S, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 161, August 2015, Pages 41-49.
3. Ala'a A. A. Azzam, Jonathan Tennyson, Sergei N. Yurchenko, and Olga V. Naumenko, ExoMol molecular line lists - XVI: The rotation-vibration spectrum of hot, *MNRAS* doi:10.1093/mnras/stw1133 first published online May 26, 2016.

Conferences

1. 22nd colloquium on high resolution molecular spectroscopy, Dijon, France, 2011, 29 August - 2 September.
2. European Conference on Laboratory Astrophysics, Paris, France, 2011, 26 - 30 September.
3. Opacities in Cool Stars and Exoplanets, Cumberland Lodge, UK, 2012, 2 - 5 July.
4. The 22rd International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, 2012, 4 - 8 September.
5. International Symposium on Molecular Spectroscopy 68th Meeting, Ohio state, USA, 2013, 17 - 21 June.
6. The national astronomy meeting of the royal astronomical society, Scotland, UK, 2013, 2 -5 July.
7. High Resolution Molecular Spectroscopy 2013, Budapest, Hungary, 2013, 25 - 30 August.
8. 11th Conference of the Arab Union for Space and Astronomy Sciences, Sharjah, UAE, 2014, 8 - 11 December.
9. The 14th national festival in popular astronomy, Constantine, Algeria, 2015, 8-11 October.
10. The first international forum for students of amateur astronomy, Tunisia, 30 March- 2 April 2016.

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