

Dr. JAMAL RAFIQUE (Postdoc Research Scientist, UFSC, Brazil)

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PERSONAL:

Date of Birth : 3rd May 1984

EDUCATION:

- 1. Postdoc**
In progress, Session= 2015-till now, UFSC (Brazil)
Field of specialization = Organic Chemistry (Green Synthetic Chemistry)
Scholarship = CAPES PNPd Fellowship
- 2. Post-Graduation (PhD)**
Session = 03/2011-12/2014, Universidade Federal de Santa Catarina (Brazil)
Field of specialization = Organic Chemistry (Medicinal and Synthetic Chemistry)
Scholarship = TWAS-CNPq PhD Fellowship
- 3. Professional Qualification(B.Ed.)**
65.05 %, Session = 2008-2009, University of Peshawar (Pakistan)
- 4. Post-Graduation (M.Phil.)**
3.9 / 4.0 (CGPA), Session = 2006-2008, University of Peshawar (Pakistan)
Subject = Chemistry
Field of specialization = Organic Chemistry (course work)
- 5. Post-Graduation (M.Sc.)**
73.91 %, Session= 2003-2005, University of Malakand (Pakistan)
Subject = Chemistry
Field of specialization = Organic Chemistry + Research
Scholarship = HEC–Talent farming Scholarship Scheme
- 6. Graduation (B.Sc.)**
61.81 %, Session= 2001-2003, University of Peshawar (Pakistan)
Course = Biological Sciences (Chemistry, Botany, Zoology)
- 7. Pre Graduation (HSSC / F.Sc.)**
68.27 %, Session= 1999-2001, B.I.S.E. Peshawar (Pakistan)
Subject = Pre-medical (Chemistry, Biology, Physics)
- 8. Under Graduation (SSC)**
70.11 %, Session= 1997-1999, B.I.S.E. Peshawar (Pakistan)
Subject = Science (Chemistry, Biology, Physics, Mathematics)

LANGUAGE SKILLS:

English	= Speak, Read and Write
Urdu	= Speak, Read and Write
Portuguese (Brazilian)	= Speak, Read and Write
Punjabi	= Speak, Read and Write
Pushto	= Speak, Read and Write
Hindkou	= Speak, Read and Write
Hindi	= Speak

EXPERIENCES:

- **Practical/Lab. Experience:**
Utilization of Green synthetic approach in solution phase and phase organic synthesis. (2011-till now)
- Developing new green methodologies in organic synthesis. (2011-till now)
- Synthesis & medicinal importance of organoselenium compounds (2011-till now)
- Isolation & characterization of secondary metabolites from medicinal plants. Antioxidants assay (Lipid peroxidation, TBARS, DPPH, Iron chelation, Nitrous oxide (2006-2010)
- Worked on medicinal plants in HEJ-RIC, ICCBS, University of Karachi, Karachi, 72500, Pakistan. (2009-2010)
- 25th training program on the use of nuclear and other techniques in food and agriculture (2008-09) from NIFA, Peshawar, Pakistan.
- **Teaching:**
Teaching experience in different postgraduate and undergraduate institutes during 2006-2007, 2010, 2013-2015.

AWARDS AND SCHOLARSHIPS:

- CAPES-PNPD **Postdoc Junior Research Fellowship** (2015-in progress)
- TWAS-CNPq **PhD Research Fellowship** (2011-2014)
- 65 percentile in ETS-GRE Chemistry (USA) in November 2010.
- Scored 54 with 84.43 percentile in local GRE test conducted by National Testing Service (NTS) Pakistan October 2006.
- **Among the distinguishing students** (Got 2nd position during M.Sc. in University of Malakand, 2005).
- **HEC – Talent farming Scholarship Scheme** (M.Sc. Scholarship) awarded on basis of getting 1st position in the entry test conducted by HEC in 2004.

MEMBERSHIP:

- **Royal Society of Chemistry (RSC)** since 2015.
- **American Chemical Society (ACS)** since 2014.
- **Brazilian Chemical Society (SBQ)** since 2013.
- **Science Society** (University of Peshawar) since 2006.
- **Pakistan Chemical Society** since 2010.

PROFICIENCIES / SKILLS:

- Computer literate, and have enough experience of working in various computer programs e.g. MS-windows, MS-word, MS-excel, MS-Power Point, MS-Front Page, Chem. Office, Chem. Draw, Photoshop, Web Browsing etc as well as having good command on computer hardware.
- Can operate Bruker Ac-200 & Ac-400 NMR, Cary 60 UV, Bruker Benchtop IR Spectrophotometer, CD, Gas Chromatography and Mass spectrometry, Recycling Preparative HPLC machines.
- Structure elucidation with modern NMR techniques including acquisition of 1D and 2D NMR techniques. Use of current analytical and predictive tools including HPLC, GCMS, LCMS chromatography.
- Proficient with the operation, maintenance, and small repairs of technical and sensitive lab equipment (HPLC pumps, rotary chromatotrons, vacuum apparatus).
- Success as a laboratory and tutorial instructor in general and organic chemistry, Experienced working in a multidisciplinary team. Appropriate organization, record keeping, written and verbal communication skills.
- Excellent Debater of English and Urdu.

CONFERENCES/ SYMPOSIA/ WORKSHOPS/ SEMINARS ATTENDED:

- Oral presentation in “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015. (Selected among 360 works)
- Poster presentation in “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- Poster presentation in “**ACS Summer School on Green Chemistry & Sustainable Energy-2015**”, Golden-Denver, USA, 21-28 June 2015.
- Posters presentation in “**248th ACS National Meeting - San Francisco, CA**”, - San Francisco, USA, 10-14 August, 2014.
- Participated in “**BIOVISION.Nxt Fellowship Program at BIOVISION 2014 - the World Life Sciences Forum**”, Lyon, France, 5-6 Jun 2014.
- Attended “**Minicourse on Element Analysis for Specification, Bioanalysis and Metallomics**”, organized by UFSC, SC, Brazil, 06-10 October 2014.
- Poster presentation in “**37th SBQ – Brazilian Chemical Society**”, Natal, Brazil, 26-29 May 2014.
- Poster presentation in “**15th BMOS - Brazilian Meeting on Organic Synthesis**”, Campos de Jordao, Brazil, 10-13 Aug 2013.
- Attended “**Second International Workshop PPGEQ/UFSCar: Advances in Industrial Biotechnology**”, UFSCar São Carlos - SP, Brazil. 28-29 July 2013.
- Attended “**2nd week of Post-Graduate in Chemistry at UFSC**”, organized by UFSC, SC, Brazil, 17-21 June 2013.

- Attended “**Mini-course on NMR in Solutions - Aspects, Theories and Practice**”, organized by UFSC, SC, Brazil, 17-21 June 2013.
- Poster presentation in “**IV meeting of Selenium and Tellurium**”, Torres, Brazil 3-6 Dec 2012.
- Poster presentation in “**4th International IUPAC Conference on Green Chemistry**”, Foz do Iguacu, Brazil, 25–29 August 2012.
- Attended “**1st week of Post-Graduate in Chemistry at UFSC**”, organized by UFSC, SC, Brazil, 18-22 June 2012.
- Participated in “**National Work-Shop on Chemical Laboratory Safety & Security**” organized by HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, 23-24 Feb 2011.
- Participated in “**3rd International Symposium-cum-Training Course on Molecular Medicine and Drug Research**” organized by PCMD-HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, January 2011.
- Poster Presentation in “**12th International symposium on Natural product Chemistry**” organized by HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, 22-25 November 2010.
- Attended “**Workshop on Applications of Modern Mass Spectrometry Techniques for Drug Development from Natural Products**” organized by HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, 26-27 November, 2010.
- Participated in “**Development of Sustainable and Collaborative Research Networks**” organized by British Council, HEC and Department of Agricultural Chemistry, Faculty of Nutrition sciences, Peshawar-25120, 21-22 October, 2010.
- Poster presentation in “**First Spring Research Poster Symposium-2010 at ICS**” organized by Chemical Society, Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Saturday March 20, 2010.
- Attended Mr. Muhammad Imran (AJOU University South Korea) seminar on “**BTG2, C-Myc and Differentiation**” organized by Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Saturday February 20th, 2010.
- Attended Dr. Khurshid Ali seminar on “**Linear relationship between two variables**” organized by Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Thursday February 11th, 2010.
- Participated in “**Recent Trends in Indigenous Chemical Research & Awareness on Data Presentation Skills**” Symposium organized by HEC and Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, 24-27 July, 2009.
- Attended Dr. Zahid Amjad seminar on “**Kinetic and Mechanistic Aspects of Mineralization**” organized by Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Wednesday May 20th, 2009.

- Attend HEC-ICCBS British Council one-day workshop on “**Natural Product-Based Drugs and Other Botanical Presents Status and Future Prospects**” organized by HEC and HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, 16th May 2009.
- Attended Mr. Salman Ahmad (Scientific Officer) seminar on "**Basic concepts of ionizing radiation and safety/security of radioactive sources**" organized by Institute of Chemical Sciences, University of Peshawar, Peshawar-25120, Wednesday 11, 2009
- Attend HEC-ICCBS British Council one-day workshop on “**Nutraceutical Food**” organized by HEC and HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, 21st January 2009.
- Participated in “**11th International symposium on Natural product Chemistry**” organized by HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, October 30-November 2, 2008.
- Presentation in “**1st Junior National Chemistry**” Symposium (under the age of **35**) organized by HEC, NCGC and University of Azad Jammu & Kashmir, City Campus, CMH Road, Muzaffarabad-13100, 19-22 October 2008.
- Basic First Aid Training form **Pakistan Red Crescent Society** NWFP Branch, Pakistan in Dec 2007.
- Participated in **Mega Science exhibition** 2006-07, University of Peshawar.
- Participated in **Social Work Program** arrange by Govt. P.G. College Mardan during session 2002-03.

Articles (Published/Accepted):

- (1) DMSO/Iodine-Catalyzed Oxidative C–Se/C–S Bond Formation: A Regioselective Synthesis of Unsymmetrical Chalcogenides with Nitrogen- or Oxygen-containing Arenes *Catalysis Science & Technology*, 2016, DOI: 10.1039/C5CY01503K. (impact factor: 5.426)
- (2) Antioxidant and antiplasmodial activities of bergenin and 11-O-galloylbergenin isolated from *Mallotus philippinensis*, *Oxidative Medicine and Cellular Longevity*, 2016 Manuscript Number 279270. (impact factor: 3.516)
- (3) Synthesis of new monodendrons, gallic acid derivatives, selfassembled in a columnar phase. *Liquid Crystals*, 2016, DOI:10.1080/02678292.2015.1106013. (impact factor: 2.486)
- (4) Recent advances in the synthesis of biologically relevant selenium containing 5-member heterocycles. *Current Organic Chemistry*, 2016, 20 (2), 166-188. (impact factor: 2.157)
- (5) Synthesis and Biological Evaluation of 2-Picolylamide-Based Diselenides with Non-Bonded Interactions. *Molecules*, 2015, 20 (6), pp 10095-10109. (impact factor: 2.416)
- (6) Synthesis of Unsymmetrical Diorganyl Chalcogenides under Greener Conditions: Use of a Catalytic Iodine/DMSO Oxidant System, Solvent- and Metal-Free Approach. *Advanced Synthesis & Catalysis*, 2015, 357 (7), pp 1446–1452. (impact factor: 5.663)
- (7) Synthesis of new functionalized organoselenium materials: selenides and diselenides containing cholesterol. *European Journal of Organic Chemistry*, 2015, (16), pp 3470-3476. (impact factor: 3.065)
- (8) Various fractions of *Hypericum x moserianum* and *Hypericum ericoides* possess antiglycation, anti-lipid peroxidation, antioxidative activities and non-toxic effects in vitro. *Pakistan journal of pharmaceutical sciences*, 2015, 28(3), pp 933. (impact factor: 1.103)
- (9) K₂CO₃-mediated, direct C–H bond selenation and thiolation of 1,3,4-oxadiazoles in the absence of metal catalyst: an eco-friendly approach. *RSC Advances*, 2014, 4 (93), pp 51648-51652. (impact factor: 3.84)
- (10) Solvent-Free Fmoc Protection of Amines Under Microwave Irradiation, *Asian Journal of Organic Chemistry*, 2012, 2(9), pp 746-748. (impact factor: 3.318)
- (11) 2-[(1R*,4R*)-1,4-Dihydroxycyclohexyl]acetic acid, *Acta Crystallographica Section E*. 2011, V67, o967 [doi:10.1107/S1600536809026294]. (impact factor: 0.347)
- (12) The Antifungal Activity of *Sarcococca saligna* Ethanol Extract and its Combination Effect with Fluconazole against Different Resistant *Aspergillus* Species. *Applied Biochemistry and Biotechnology*. 2010, 162 (1), pp 127-133. (impact factor: 1.735)

- (13) Antiplasmodial Isoflavanones from the Roots of *Sophora mollis*. *Journal of Natural Products*. 2009, 72 (7), pp 1265–1268. (impact factor: 3.798)
- (14) Chemical constituents from the aerial parts of *Sophora mollis*. 2009, 45 (6), pp 896-897. (impact factor: 0.509)

Articles (In writing and submission process):

- (1) Regioselective, solvent- and metal-free chalcogenation of imidazo[1,2-a]pyridines employing I₂/DMSO as an eco-friendly catalytic oxidation system.. (Submitted in *Chemistry-European Journal*).
- (2) Microwave-assisted, Copper Catalyzed Synthesis of Unsymmetric Organochalcogenides Under Solvent-Free Condition. (For *Organometallics*), English Revision in progress.
- (3) Design, Synthesis and Evaluation of Ester Derivatives of Diselenides, as Potential Multi-Targeted Therapeutics for Alzheimer's disease. (In progress for *Organic & Biomolecular Chemistry*).
- (4) Biological screening of *Litsea monopetala (roxburgh) persoon* bark extracts. (Submitted in *Pakistan Journal of Botany*)
- (5) Antimicrobial activities of aerial parts of *Strobilanthes atropurpureus*. (Submitted in *Pakistan Journal of Botany*)
- (6) Chemical derivatization of bioactive constituents from *Mallotus philippinensis*. (In progress)
- (7) 5,7,8'-Trihydroxy-5'-methoxy-2',2'-dimethyl-3,6'-bichroman-4-one a new isoflavanone from *Sophora mollis* roots. (In progress)

Chapters:

- (1) **Synthesis of Biologically Relevant Small Molecules Containing Selenium. Part A. Antioxidant Compounds;** ed. Patai, Z. *The Chemistry of Organic Selenium and Tellurium Compounds, Volume 4*. Wiley and Sons: Chichester, 2014, 989.
- (2) **Synthesis of Biologically Relevant Small Molecules Containing Selenium. Part B. Anti-infective and anticancer compounds;** ed. Patai, Z. *The Chemistry of Organic Selenium and Tellurium Compounds, Volume 4*. Wiley and Sons: Chichester, 2014, 1053.
- (3) **Synthesis of Biologically Relevant Small Molecules Containing Selenium. Part C. Miscellaneous biological activities;** ed. Patai, Z. *The Chemistry of Organic Selenium and Tellurium Compounds, Volume 4*. Wiley and Sons: Chichester, 2014, 1119.

Patents:

- (1) *Process for the preparation of seleno esters derivatives diidropirimidinones and its application as antioxidants and acetylcholinesterase inhibitors in the treatment of alzheimer's disease* (Brazil), Deposited 2015.
- (2) *Process for synthesis of diselenide derivatives of esters*, **BR-10-2014-021458-5** (Brazil), approved 2014.
- (3) *Diselenide derivatives of 2-picolyamine and process of their obtaining*, **BR-10-2013-010963-0** (Brazil), approved 2013.
- (4) *Process for synthesis of diselenide of salicylic acid and Selenocyanate derivative of salicylic acid*, **BR-10-2013-018373-3** (Brazil), approved 2013.
- (5) *Diselenide derivatives of Cholesterol, Process of obtaining and uses*, **BR-10-2013-108095-5** (Brazil), approved 2013.

Conference Presentations/Papers: (Since 2011)

- (1) *Regioselective Chalcogenation of imidazoheterocycles under Greener Conditions: Use of an Iodine/DMSO System, Solvent- and Metal-Free Approach*. “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- (2) *Synthesis of Unsymmetrical Diorganyl Chalcogenides under Greener Conditions: Use of a Catalytic Iodine/DMSO Oxidant System, Solvent- and Metal-Free Approach*. “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- (3) *Synthesis of new functionalized organoselenium materials* “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- (4) *Design and synthesis of Probucoyl organochalcogen analogues* “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- (5) *Synthesis of 3-selenocyanate indoles under mild conditions* “**16th BMOS - Brazilian Meeting on Organic Synthesis**”, Buzios-RJ, Brazil, 15-18 Nov 2015.
- (6) *Transition Metal-Free Direct CH Bond Selenation of 1,3,4-oxadiazoles*. **248th ACS National Meeting** - San Francisco, USA, 10-14 August 2014.
- (7) *One pot catalytic generation of electrophilic selenium reagents: Application in the eco-friendly seleno cyclofunctionalization of olefins*. **248th ACS National Meeting** - San Francisco, USA, 10-14 August 2014.
- (8) *Transition Metal-Free Direct C–H Bond Selenation of 1,3,4-Oxadiazoles*. **37-SBQ**, Natal – Brazil, 26-29 May 2014.
- (9) *Process Synthesis of Diselenide Based Novel Amide Derivatives: A potential Anti-Alzheimer Compounds*. **37-SBQ**, Natal Brazil, 26-29 May 2014.
- (10) *Synthesis of Diselenide Based Picolyamide Derivatives: Biologically Potential Compounds*. **15-BMOS**, Campos do Jordao –Brazil, 10-13 Nov 2013.
- (11) *Synthesis of Diselenide Containing Esters: Biologically Potential Compounds*. **15-BMOS**, Campos do Jordao –Brazil, 10-13 Nov 2013.

- (12) *Convergent synthesis of 4-amido substituted dihydropyrimidinone diselenides: Biologically Potential Compound. IV ESeTe*, Torres- Brazil, 3-6 Dec 2012.
- (13) *Synthesis of Diselenide Derivatives of Amphetamine with potential Glutathione Peroxidase Mimetics - GPx. IV ESeTe*, Torres- Brazil, 3-6 Dec 2012.
- (14) *Microwave-Assisted Solvent-Free Fmoc Protection of Amines. 4th International IUPAC Conference on Green Chemistry*, Foz do Iguacu –Brazil, 25-29 Aug 2012.

REFERENCES:

- **Prof. Dr. Antonio Luiz Braga** (Ph.D – Brazil)
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