



# MUHAMMAD NAWAZ

POSITION: Assoc. Professor & Chairperson

## Personal Data

Nationality | Pakistani  
Department | Nano-Medicine Research  
Official IAU Email | mnmuhammad@iau.edu.sa  
Office Phone No. | 0133330872

## Language Proficiency

Language	Read	Write	Speak
Arabic	Low	-	-
English	V.Good	V.Good	V.Good
Urdu	V.Good	V.Good	V.Good
Chinese	-	-	Low

## Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2010	Ph.D	University of Karachi	Pakistan
2004	M.Sc	University of Karachi	Pakistan
2002	B.Sc	Islamia University of Bahawalpur	Pakistan

## PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions)

PhD	Drug Interaction and Derivative Synthesis of Cefpirome
Fellowship	Synthesis of nanomaterials for catalytic applications
Fellowship	Preparation of nanomaterials for photocatalytic hydrogen production

## Professional Record: (Beginning with the most recent)



Job Rank	Place and Address of Work		Date
Chairperson		Department of Nano-Medicine Research, IRMC, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	2023 to present
Associate Professor		Department of Nano-Medicine Research, IRMC, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	Dec.2020 to present
Assistant Professor		Department of Nano-Medicine Research, IRMC, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	2015-2020
Postdoctoral Fellow		Wuhan University of Technology, China	2013-2015
Postdoctoral Fellow		United Arab Emirates University, UAE	2010-2013

#### Administrative Positions Held: (Beginning with the most recent)

Administrative Position	Office	Date
Chairperson	Department of Nano-Medicine Research, IRMC, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	2023 to present
Department Representative	Department of Nano-Medicine Research, IRMC, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	2016 to 2017

#### Scientific Achievements

#### Published Refereed Scientific Researches (Selected publications, for complete list please visit google scholar profile)

(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1	Yassine Slimani, Zainab H Al Naji, Essia Hannachi, <b>Muhammad Nawaz</b> , R Sivakumar, Sultan Akhtar, Munirah A Almessiere, Abdulhadi Baykal, R Vignesh, Atul Thakur, Preeti Thakur	Efficient photocatalysis of Zn1-2xEuxDyxO nanoparticles towards the degradation of hazardous Rhodamine B dye	Inorganic Chemistry Communications, 2024, 159, 111803



2	MS Manzar, M Zubair, M Alshabib, AH Khan, EG Alhajri, F Alakhras, M Nawaz, JAS Odeh, E Çevik, DSP Franco, J Georgin	Modification of volcanic ash for enhanced removal of malachite green: a complete batch adsorption study	International Journal of Environmental Science and Technology, 2024, 1-18
3	Suthinee Sangkana, Komgrit Eawsakul, Tassanee Ongtanasup, Rachasak Boonhok, Watcharapong Mitsuwan, Siriphorn Chimplee, Alok K. Paul, Shanmuga S Sundar, Tooba Mahboob, <b>Muhammad Nawaz</b> , Maria L. Pereira, Polrat Wilairatana, Christophe Wiart, and Veeranoot Nissapatorn	Preparation and evaluation of a niosomal delivery system containing G. mangostana extract and study of its anti-Acanthamoeba activity	Nanoscale Advances, 2024, 6, 1467-1479
4	Yassine Slimani, Abuzar Khan, <b>Muhammad Nawaz</b> , Mohammad Kamal Hossain, Atul Thakur	Efficient rhodamine B dye photocatalytic degradation in aqueous media using novel ZnO nanomaterials co-doped with Ce and Dy	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 2024, 321, 124725
5	Muhammad Taha, Fazal Rahim, Bushra Adalath, Syahrul Imran, Khalid Mohammed Khan, Nizam Uddin, <b>Muhammad Nawaz</b> , Mohammed Khaled Bin Break, Sami M Magam, Saad Alqarni	Synthesis of benzimidazole derivatives and their antiglycation, antioxidant, antiurease and molecular docking study	Arabian Journal of Chemistry, 2024, 17, 105700
6	Mohammed Khaled Bin Break, Rahamat Unissa Syed, Weiam Hussein, Saad Alqarni, Sami M Magam, <b>Muhammad Nawaz</b> , Sameer Shaikh, Ahmed Al Otaibi, Najat Masood, Kareem M Younes	Noncoding RNAs as Therapeutic Targets in Autophagy-Related Diabetic Cardiomyopathy	Pathology-Research and Practice, 2024, 155225



7	Nadia Irshad, Noureen Jahanzeb, Alanood Alqasim, Raneem Bousaleh, Maha Almehrij, Sarah Ghafoor, <b>Muhammad Nawaz</b> , Sultan Akhtar, Asma Tufail Shah, Abdul Samad Khan	Synthesis and analyses of injectable fluoridated-bioactive glass hydrogel for dental root canal sealing	PLoS ONE, 2023, 8, e0294446.
8	Abdul Samad Khan, Yasmin Alhamdan, Hala Alibrahim, Khalid S Almulhim, <b>Muhammad Nawaz</b> , Syed Zubairuddin Ahmed, Khalid Aljuaid, Ijlal Shahrukh Ateeq, Sultan Akhtar, Mohammad Azam Ansari, Intisar Ahmad Siddiqui	Analyses of Experimental Dental Adhesives Based on Zirconia/Silver Phosphate Nanoparticles	Polymers, 2023, 15 (12) 2614.
9	Muhammad Taha, Shawkat Hayat, Fazal Rahim, Nizam Uddin, Abdul Wadood, <b>Muhammad Nawaz</b> , Mohammed Gollapalli, Ashfaq Ur Rehman, Khalid Mohammed Khan, Rai Khalid Farooq	Exploring thiazole-based Schiff base analogs as potent.-glucosidase and.-amylase inhibitor: their synthesis and in-silico study	Journal of Molecular Structure, 2023, 1287, 135672
10	Muhammad Taha, Aftab Ahmad Khan, Fazal Rahim, Shawkat Hayat, Syahrul Imran, Naveed Iqbal, Nizam Uddin, Khalid Mohammed Khan, Rai Khalid Farooq, <b>Muhammad Nawaz</b> , Syed Adnan Ali Shah	Synthesis, in vitro evaluation and molecular docking studies of hybrid 4-quinolinyl bearing 1,3,4-thiadiazole-2-amine as a new inhibitor of $\alpha$ -amylase and $\alpha$ -glucosidase	Journal of Molecular Structure, 2023, 1282, 135173.
11	Aysha Alneyadi, Zohra Nausheen Nizami, Hanan E Aburawi, Soleiman	Synthesis of New Chromene Derivatives Targeting Triple-Negative Breast Cancer Cells	Cancers, 2023, 15 (10) 2682



	<p>Hisaindee, <b>Muhammad Nawaz</b>, Samir Attoub, Gaber Ramadan, Nehla Benhalilou, Mazoun Al Azzani, Yassine Elmahi, Aysha Almeqbali, Khalid Muhammad, Ali H Eid, Ranjit Vijayan, Rabah Iratni</p>		
12	<p>Essia Hannachi, Yassine Slimani, <b>Muhammad Nawaz</b>, R Sivakumar, Zayneb Trabelsi, R Vignesh, Sultan Akhtar, Munirah A Almessiere, Abdulhadi Baykal, Ghulam Yasin</p>	<p>Preparation of cerium and yttrium doped ZnO nanoparticles and tracking their structural, optical, and photocatalytic performances</p>	<p>Journal of Rare Earths, 2023, 41(5), 682-688.</p>
13	<p>Rahamat Unissa Syed, Sivakumar S Moni, <b>Muhammad Nawaz</b>, Mohammed Khaled Bin Break, Nasrin E Khalifa, Siddig Ibrahim Abdelwahab, Reham Meshal Alharbi, Raghad Huraid Alfaisal, Bayan Naif Al Basher, Entsar Mohammed Alhaidan.</p>	<p>Formulation and Evaluation of Amikacin Sulfate Loaded Dextran Nanoparticles against Human Pathogenic Bacteria</p>	<p>Pharmaceutics, 2023, 15(4)1082.</p>
14	<p>Abolghasem Siyadatpanah, Roghayeh Norouzi, Farzaneh Mirzaei, Bibi Fatemeh Haghrosadat, Veeranoot Nissapatorn, Watcharapong Mitsuwan, <b>Muhammad Nawaz</b>, Maria Lourdes Pereira, Seyed Abdollah Hosseini, Mahbobeh Montazeri, Mohammad Majdizadeh, Ray S Almeida,</p>	<p>Green synthesis of nano-liposomes containing Bunium persicum and Trachyspermum ammi essential oils against Trichomonas vaginalis. Journal of Microbiology, Immunology and Infection</p>	<p>Journal of Microbiology, Immunology and Infection, 2023, 56 (1) 150-162.</p>



	Mahdie Hemati, Polrat Wilairatana, Henrique Douglas Melo Coutinho		
15	Amani AS Abdelaziz, <b>Muhammad Nawaz</b> , Ishraga Izzeldin, Haya A Abubshait, Ahmed Alsadig, MS Gomaa, Samar A Abubshait, Donya Alsewdan	Molecular docking and Anticancer Activity of Some Synthesized 1, 4-naphthoquinone Derivatives against Human Cancer Cell Line	Journal of Molecular Structure, 2023, 1275, 134702.
16	Suthinee Sangkanu, Alok K Paul, Julalak Chuprom, Watcharapong Mitsuwana, Rachasak Boonhok, Maria de Lourdes Pereira, Sonia Marlene Rodrigues Oliveira, Polrat Wilairatana, Mohammed Rahmatullah, Christophe Wiart, <b>Muhammad Nawaz</b> , Chea Sin, Sunil Kayesth, Veeranoot Nissapatorn	Conserved Candidate Antigens and Nanoparticles to Develop Vaccine against <i>Giardia intestinalis</i>	Vaccines, 2023, 11(1) 96.
17	Zahra Abdulkarim Homoud, Muhammad Taha, Fazal Rahim, Naveed Iqbal, <b>Muhammad Nawaz</b> , Rai Khalid Farooq, Abdul Wadood, Munther Alomari, Imadul Islam, Shatha Algheribe, Ashfaq Ur Rehman, Khalid Mohammed Khan, Nizam Uddin	Synthesis of indole derivatives as Alzheimer inhibitors and their molecular docking study.	Journal of Biomolecular Structure and Dynamics, 2023, 41 (19) 9865-9878.
18	Muhammad Taha, Mohammed Salahuddin, Noor Barak Almandil, Rai Khalid Farooq, Fazal Rahim, Nizam Uddin, <b>Muhammad Nawaz</b> , Amani H. Alhibshi, El	In Vitro and in Vivo Antidiabetics Study of New Oxadiazole Derivatives Along with Molecular Docking Study	Polycyclic Aromatic Compounds, 2023, 43 (8) 6911 – 6926.



	Hassane Anouar, and Khalid Mohammed Khan		
19	Samar A Abubshait, Haya A Abubshait, Rasha Almalih, Mohamed S Gomaa, <b>Muhammad Nawaz</b> , Ibtisam M Ababutain, Azzah I Alghamdi.	Microwave-Assisted Synthesis of Phthalazinone Derivatives with Biological Activity and In Silico Antiproliferative Studies	<i>ChemistrySelect</i> , 2022,7 (4613) e202203925.
20	Faiza Qureshi, <b>Muhammad Nawaz</b> , Soleiman Hisaindeec, Sarah Ameen Almoftyd, Mohammad Azam Ansarie, Qazi Mohammad Sajid Jamalf, Nisar Ullahg, Muhammad Tahah, Ohood Alshehrib, i, Bader Huwaimelj, Mohammed Khaled Bin Break	Microwave Assisted Synthesis of 2-amino-4-chloro-pyrimidine Derivatives: Anticancer and Computational Study on Potential Inhibitory Action against COVID-19	Arabian Journal of Chemistry, 2022, 15(12) 104366.
21	Faiza Qureshi, <b>Muhammad Nawaz</b> , Mohammad Azam Ansari, Firdos Alam Khan, Mahmoud M Berekaa, Samar A Abubshait, Rayyanah Al-Mutairi, Alok K Paul, Veeranoot Nissapatorn, Maria de Lourdes Pereira, Polrat Wilairatana	Synthesis of M-Ag <sub>3</sub> PO <sub>4</sub> , (M = Se, Ag, Ta) Nanoparticles and Their Antibacterial and Cytotoxicity Study.	International Journal of Molecular Sciences, 2022, 23 (19) 11403.
22	Essia Hannachi, Yassine Slimani, <b>Muhammad Nawaz</b> , Zayneb Trabelsi, Ghulam Yasin, Muhammad Bilal, Munirah A. Almessiere, Abdulhadi Baykal, AtulThakur, Preeti Thakur	Synthesis, characterization, and evaluation of the photocatalytic properties of zinc oxide co-doped with lanthanides elements.	Journal of Physics and chemistry of solid, 2022, 170, 110910.
23	Tahani M Alfareed, Yassine Slimani, Munirah A Almessiere,	Biocompatibility and colorectal anti-cancer activity study of nanosized BaTiO <sub>3</sub> coated spinel ferrites.	Scientific Reports, 2022, 12 (1) 1-18.



	<b>Muhammad Nawaz,</b> Firdos A Khan, Abdulhadi Baykal, Ebtesam A Al-Suhaimi		
24	<b>Muhammad Nawaz,</b> Mohammad Azam Ansari, Alejandro Pérez Paz, Soleiman Hisaindee, Faiza Qureshi, Anwar Ul-Hamid, Abbas Saeed Hakeem and Muhammad Taha.	Sonochemical synthesis of ZnCo <sub>2</sub> O <sub>4</sub> /Ag <sub>3</sub> PO <sub>4</sub> heterojunction photocatalysts for the degradation of organic pollutants and pathogens: a combined experimental and computational study.	New Journal of Chemistry, 2022, <b>46</b> , 14030 – 14042.
25	Masyitah Zulkipli , Nuzum Mahbub , Ayesha Fatima, Stefanie Lim Wan-Lin, Teng-Jin Khoo, Tooba Mahboob, Mogana Rajagopal, Chandramathi Samudi, Gheetanjali Kathirvalu, Nor Hayati Abdullah, Ana Rita Pinho, Sonia M. R. Oliveira, Maria de Lourdes Pereira, Mohammed Rahmatullah, Anamul Hasan, Alok K. Paul, Mark S. Butler, <b>Muhammad Nawaz,</b> Polrat Wilairatana , Veeranoot Nissapatorn and Christophe Wiart	Isolation and Characterization of Werneria Chromene and Dihydroxyacidissimol from <i>Burkillanthus malaccensis</i> (Ridl.) Swingle. Plants <b>2022</b> , 11(11), 1388.	Plants <b>2022</b> , 11(11), 1388.
26	Almofty, S.A., <b>Nawaz, M.</b> , Qureshi, F., Al-Mutairi, R..	Hydrothermal Synthesis of $\beta$ -Nb <sub>2</sub> ZnO <sub>6</sub> Nanoparticles for Photocatalytic Degradation of Methyl Orange and Cytotoxicity Study.	International Journal of Molecular Sciences, 2022, 23(9), 4777.
27	D Gautam , K G Dolma , B Khandelwal , W Mitsuwan , T Mahboob, M L Pereira, <b>M Nawaz</b> , C Wiart , A Ardebili , A	Acinetobacter baumannii: An overview of emerging multidrug-resistant pathogen.	The Medical journal of Malaysia, 2022, 77(3) 357–370.





	Siyadatpanah , H Ehtesham, J K Patra , W Kwanhian , V Nissapatorn		
28	Jana Abdullah Al- Mohammadi, Muhammad Taha, Fazal Rahim, Rafaqat Hussain, Hanan aldossary, Rai Khalid Farooq, Abdul Wadood, <b>Muhammad Nawaz</b> , Mohammed Salahuddin, Khalid Mohammed Khan, NizamUddin	Synthesis, in vitro evaluation, and molecular docking studies of benzofuran based hydrazone a new inhibitors of urease.	Arabian Journal of Chemistry, 2022, 15(8), 103954.
29	Fawziah S Alshehri, Essam Kotb, <b>Muhammad Nawaz</b> , Suhailah Al-Jameel, Kamal Adel Amin.	Preparation, characterization, and antibacterial competence of silymarin and its nano-formulation	Journal of Experimental Nanoscience, 17, 2022, 100-112
30	<b>Muhammad Nawaz</b> , Muhammad Waseem Abbasi, Marium Tariq, John Patrick Graham, Abdul-Rahman Saleh Al- Hagri, Ahmed Awad Elkarim, Muayad Elsiddig Mohamed, Veeranoot Nissapatorn, Muhammad Taha, Soleiman Hisaindee	Synthesis of metal anthranilate complexes: catalytic and antipathogenic studies.	BMC Chemistry, 2022,16, (1)21.

### Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date

### Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date



## Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Title	Report Date
1	Rayyanah Saleem Almutairi, <b>Muhammad Nawaz</b> <b>DSR</b>	Synthesis of La-Ce Based Nanocomposites for the Photocatalytic Abatement of Water Pollutants	2024
2	<b>Muhammad Nawaz</b> Fatimah Alahmari, Faiza Qureshi, Abubshait, Samar, Veeranoot Nissapatorn, Maria de Lourdes Pereira <b>DSR</b>	Green Synthesis of Neodymium-Graphitic Carbon Nitride Based Ternary Materials for the Photocatalytic Abatement of Chlorophenol/Nitrophenol and Bisphenol A	2022
3	<b>Muhammad Nawaz</b> Abubshait, Samar, Vladimir V. Zarubaev , Masayuki Fujii, Veeranoot Nissapatorn , Pornsawan Leungwutiwong , Christophe Wiart, Maria de Lourdes Pereira Wei Wang, <b>DSR</b>	Exploring the Plant-Derived Scaffolds for the Treatment of Influenza and Coronaviruses and Mechanistic Studies	2021
4	<b>Muhammad Nawaz</b> Firdos Alam Khan, Emre Cevik <b>RDO</b>	Development of Electrochemical Nanobiological based sensors for Cancer Diagnosis: From Anticancer Drugs Analysis to Cancer Biomarker Detection	2022
5	Faiza Qureshi <b>Muhammad Nawaz</b> <b>KACST</b>	Preparation, Physiochemical and Biomedical Application of Metal-Based Polymeric Nanocomposite Biofilms for Skin Tissue Engineering	2018

## Current Researches

#	Research Title	Name of Investigator(s)
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1	Design of metal organic framework for the delivery of sparfloxacin	<b>Muhammad Nawaz</b> Mohammad J. Akbar, Fatima, Othman
2	Preparation of PLGA nanoparticles for the delivery of thymoquinone for the cancer treatment	<b>Muhammad Nawaz</b> Mohammad J. Akbar, Fahdhal, Usama

### Contribution to Scientific Conferences and Symposia

#	Conference Title	Place and Date of the Conference	Extent of Contribution
1	International Conference on the 4th Industrial Revolution and Its Impact (IC4IR)	27 <sup>th</sup> -30 <sup>th</sup> March, 2019, Nakhon Si Thammarat, Thailand	Oral presentation & Session chair
2	International Symposium on Medicinal Resources of Countries Along One Belt and One Road	20 <sup>th</sup> -23 <sup>th</sup> Oct., 2019, Nanning, China	Oral presentation
3	2019 Hunan Innovative International Conference On Biomedicine and Chinese Medicine	23 <sup>th</sup> -25 <sup>th</sup> Oct. 2019, Changsha, China	Oral presentation
4	6 <sup>th</sup> Hunan International Conference for Innovation and Development of Biomedicine and Chinese Medicine	1 <sup>st</sup> -5 <sup>th</sup> Nov. 2023, Changsha, China	Oral presentation & Session chair
5	1 st International Training Course on Natural Product Technology (1st ITC-NPR),	6 <sup>th</sup> to 17 <sup>th</sup> May, 2024, Changsha, China	Inaugural Speech of opening session & training to the students

### Membership of Scientific and Professional Societies and Organizations

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## Teaching Activities

### Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
	General Chemistry	CHM-302/312	Lectures and labs

### Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)


### Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Material Science I	MSNE-804	Lectures & Labs
2	Material Science II	MSNE-834	Lectures & Labs
3	Nanotechnology II	MSNE-830	Lectures
4	Nano-Biomaterials	MSBE-827	Lectures
5	Organic Chemistry	CHM-612	Labs
6	Pharmaceutical/Medicinal Chemistry	CHM-614	Lectures

### Brief Description of Postgraduate Courses Taught: (Course Title – Code: Description)

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### Course Coordination



#	Course Title and Code	Coordination	Co-coordination	Undergrad.	Postgrad.	From	To
	Nanotechnology Program				*	2023	2023

#### Guest/Invited Lectures for Undergraduate Students

#	Activity/Course Title and Code	Subject	College and University or Program	Date

#### Student Academic Supervision and Mentoring

#	Level	Number of Students	From	To
	M. Sc	5	2023	present

#### Supervision of Master and/or PhD Thesis

#	Degree Type	Title	Institution	Date
	M. Sc	Synthesis of La-Ce Based Nanocomposites for the Photocatalytic Abatement of Water Pollutants	IRMC, Imam Abdulrahman Bin Faisal University	2023
	M. Sc	Synthesis, Characterization and Anti-diabetic Activity of Pyrimidine Derivatives	Imam Abdulrahman Bin Faisal University	2024
	M. Sc	Design and Synthesis of Bimetallic-Metal Organic Frameworks based on Cerium for the Photocatalytic Degradation of Aqueous Organic Pollutants	IRMC, Imam Abdulrahman Bin Faisal University	2024



### Ongoing Research Supervision

#	Degree Type	Title	Institution	Date
	M. Sc	Synthesis and characterization of anti-bacterial fillers-based dental restorative materials	IRMC, Imam Abdulrahman Bin Faisal University	2023 to present
	Ph.D	PHYTOCHEMICALS, ANTI-ADHESION AND ANTI-Acanthamoeba PROPERTY OF Carica papaya Linn. PLANT EXTRACTS AND THEIR NANOFORMULATIONS AGAINST Acanthamoeba CAUSING KERATITIS	De La Salle University–Dasmariñas	2023 to present

### Administrative Responsibilities, Committee and Community Service (Beginning with the most recent)

#### Administrative Responsibilities

#	From	To	Position	Organization
	2023	present	Chairperson	IAU
	2016	2017	Department representative	IAU

#### Committee Membership

#	From	To	Position	Organization
1	2024	present	Member of IRMC Scientific Council, IAU	IAU
2	2023	2023	Co-ordinator of Master of Nanotechnology Program	IAU
3	2023	present	Member of the Quality and Academic	IAU



			Accreditation Committee	
4	2021	2023	Co-ordinator of IRMC-Mawhiba research program	IAU
5	2018	2023	Member of the Public Relation Committee	IAU

### Scientific Consultations

#	From	To	Institute	Full-time or Part-time
1	2016	2019	University of Malaya	Part Time
2	2020	present	Walailak University	Part Time

### Volunteer Work

#	From	To	Type of Volunteer	Organization

### Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

<p>I'm well trained and have working experience on the following instruments:</p> <ul style="list-style-type: none"> <li>• FE-SEM, EDX (Hitachi, S-4800)</li> <li>• ELISA reader (BioTek)</li> <li>• Diffuse Reflectance UV-Visible Spectrophotometer (UV-2550, Shimadzu, Japan)</li> <li>• High Pressure Compact Reactor (Parr)</li> <li>• Fixed Bed Reactor</li> <li>• BET Surface analyzer (Qunatachome NOVA 1000), PLUS 2020</li> <li>• Chem BET, TPR/TPO/TPD Chemisorption analyzer (Qunatachrome)</li> <li>• TGA &amp; DSC (Shimadzu) and Perkin Elmer</li> <li>• Diffuse Reflectance FT-IR.(IRAffinity-1), Shimadzu</li> <li>• Fourier transform Infrared Spectrophotometer: Shimadzu and Thermonicolet (IR Prestige21) and Perkin Elmer</li> <li>• Electro spinning</li> <li>• HPLC, Agilent 1200 series with quaternary pump &amp; autosampler &amp; Shimadzu (LC-20 AT)</li> </ul>
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- Fluorescence Varian
- Freeze drier
- Microwave Synthesizer (CEM), discovery
- <sup>1</sup>H-NMR and <sup>13</sup>C-NMR (Varian, 400 MHz)
- Chromatographic techniques (Column, Thin layer, flash Chromatography, Chromatotron)
- High Pressure Homogenizer
- Elemental Analyzer (Perkin Elmer)
- XRD (Rigaku)

### Research IDs links

- **Scopus ID:** <https://www.scopus.com/authid/detail.uri?authorId=7006603509>
- **Orcid Id:** <http://orcid.org/0000-0001-9016-9229>

#### Google Scholar:

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&hl=en&user=TgCn85YAAAAJ&sortby=pubdate](https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=TgCn85YAAAAJ&sortby=pubdate)

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