

Dr. Anwar ul Haq Ali Shah
Associate Professor
Institute of Chemical Sciences
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Postal Address: Institute of Chemical Sciences
University of Peshawar
Khyber Pukhtunkhwa, Pakistan

Qualification:

Post-doctorate (Chemnitz University of Technology, Germany)
Ph.D (Chemnitz University of Technology, Germany) (magna cum laude)
M.Phil. (University of Peshawar)
M.Sc. (University of Peshawar)

Specialization: Physical Chemistry/ Electrochemistry

Experience:

1. Two years M.Phil research experience in the Department of Chemistry, University of Peshawar.
2. Three years Ph.D research experience in the Institute of Chemistry/ Electrochemistry, Chemnitz University of Technology, Germany.
3. Eighteen months and 15 days Post-doctoral experience in the Institute of Chemistry/ Electrochemistry, Chemnitz University of Technology, Germany.
4. Six years teaching experience as Lecturer in various Govt. Colleges of Khyber Pukhtunkhwa (Higher Education Department).
5. Four months and 16 days teaching and research experience as Assistant Professor in the Department of Chemistry, Abdul Wali Khan University, Mardan.
6. Five years and 7 months teaching and research experience as Assistant Professor in the Institute of Chemical Sciences, University of Peshawar.
7. Ten years and nine months teaching and research experience as Associate Professor in the Institute of Chemical Sciences, University of Peshawar (Continue...)

Academic Record:

S. No.	Certificate / Degree	Year of Passing	Major Subjects	Division C.G.P.A	Board/ University
1.	S.S.C.	1989	Chemistry, Biology, Physics, Mathematics	1 st	Peshawar Board

2.	F. Sc.	1991	Chemistry, Botany, Zoology, Physics,	1 st	Peshawar Board
3.	B.Sc.	1993	Chemistry, Botany, Statistics	1 st	Gomal University
4.	M. Sc.	1996	Physical Chemistry	1 st	University of Peshawar
5.	M.Phil	2001	Physical Chemistry	3.5	University of Peshawar
6	Ph. D	2007	Physical Chemistry / Electrochemistry	Magna cum laude	Chemnitz University of Technology, Germany

Honors and Awards:

President scholarship under the auspices of University Grant Commission of Pakistan at M. Sc level.

PhD Scholarship under the auspices of Ministry of Science and Technology and Higher Education Commission of Pakistan.

Merit Scholarship awarded by Gomal University D.I. Khan at B.Sc. level

Research Productivity Awards 2010, 2011, 2012, 2013, 2014, 2015, 2016

Projects earned:

1. Conducting Polyaniline, Poly(o-aminophenol) and Poly(aniline-co-o-aminophenol) Coated Electrodes as Sensors: Experimental and Theoretical Aspects (sponsored by HEC). **Completed**

Project ID: 20-3111

Amount: Rs: 14.229 million

Role: Principal Investigator

2. Synthesis and Characterization of Soluble Polyaniline Co-doped with Sulfuric Acid and Dodecylbenzene Sulfonic Acid. (sponsored by HEC) **Completed.**

Project ID: 20-1647

Amount: Rs: 4.78 million

Role: Co-Principal Investigator

3. Synthesis and characterization of polyaniline co-doped with PVA and transition metals (sponsored by UOP) **Completed.**

Project ID: Nil

Amount: Rs: 0. 481 million

Role: Principal Investigator

4. Hydrogen Fuel Generation Via Photoelectrochemical Water Splitting Over Iron Based Photoelectrodes (sponsored by HEC). **Completed.**

Project ID: 7600

Amount: Rs: 6.717 million

Role: Co-Principal Investigator

5. Solution-Based Synthesis and characterization of BiVO₄ Nanocrystals (sponsored by HEC). **Completed.**

SRGP Project ID: 521
Amount: Rs: 0.50 million
Role: Co-Principal Investigator

6. High performance nanostructured electrode materials for energy storage in supercapacitors as PI, Rs: 19.9 million (**Evaluated and accepted by HEC**).

Project ID: 8379
Amount: Rs: 19.9 million
Role: Principal Investigator

Travel grants availed:

1. Travel grant of Rs. 271,000/- for presenting paper in “Symposium on Polymer Spectroscopy (ESOPS 19) on 07-11.07.2013 at Prague, Czech Republic.(Sponsored by HEC.

Travel Grant # 273.107/TG/R&D/HEC/2017

2. Travel grant of Rs. 219,691/- for presenting paper in “Surface Enhanced Spectroscopies (SES 2014) on 07-10.08.2014 at Germany.(Sponsored by HEC).

Travel Grant # 204.38/TG/R&D/HEC/2014

3. Travel grant of Rs.228586/- for presenting paper in “ Bayreuth Polymer Symposium 2015” (BPS2015) on 20-22.09.2015 at Bayreuth University, Germany.

Travel Grant # 233.39/TG/R&D/HEC/2015

4. Travel Grant of Rs: 237,320/-for presenting paper in “9th International Workshop on Impedance Spectroscopy” on 23-29.09.2016 at Chemnitz University of Technology, Germany.

Travel Grant # 253.20/TG/R&D/HEC/2016

5. Travel Grant of Rs:191400/- for presenting paper in the 16th International Symposium on Electroanalytical Chemistry (16th ISEAC) On 17-20.08.2017 at Chinese Academy of Sciences, Changchun China.

Travel Grant # 273.107/TG/R&D/HEC/2017

Memberships:

1. Life time member of Chemical Society of Pakistan since 2009.
2. Member [International Society for Development and Sustainability](#), Japan, since 2018.
3. Member of the **Board of Studies**, Department of Chemistry, Kohat University of Science and Technology, Since 2018.

4. Secretary, Advanced Studies and Research Board, Sub-Committee -I (**ASRB-SC.I**), Faculty of Life & Environmental Sciences, University of Peshawar, March 2020- till date.
5. Member of the **Board of Studies**, Institute of Chemical Sciences, University of Peshawar, since 2018.
6. Coordinator BS 4 Year program, Institute of Chemical Sciences, University of Peshawar
7. Coordinator, Higher Studies , Institute of Chemical Sciences, University of Peshawar

EDITORIAL JOB

1. Guest Editor of special issue of Polymers (ISSN: 2073-4360) "'Polymer Materials for Electrochemical Applications"
2. Guest Editor of special issue of Polymers (ISSN: 2073-4360) "Cutting Edge Research on the Electrochemistry of Intrinsically Conducting Polymers - Celebrating the Honorary Retirement of Prof. Dr. Rudolf Holze: A Renowned Polymer Electrochemist"

ORGANIZING IOB

1. Organizer of 5th Spring Research Poster Symposium-2014 held at Institute of Chemical Sciences, University of Peshawar
2. **Co-organizer** of the First Spring Research Poster Symposium-2010 held at Institute of Chemical Sciences, University of Peshawar.
3. **Co-organizer** of the 2nd Spring Research Poster Symposium-2011 held at Institute of Chemical Sciences, University of Peshawar, March 2011.
4. **Member of the organizing committee** of the Workshop on BS (4 Year) Chemistry held at Bara Gali Summer Campus, University of Peshawar, 30th June to 4th July 2011.
5. **Co-organizer** of the 3rd Spring Research Poster Symposium-2012 held at Institute of Chemical Sciences, University of Peshawar, March 2012.
6. **Member of the organizing committee** of the 29th National and 17th International Chemistry Conference held at Bara Gali Summer Campus, Peshawar University, 6-8 September, 2018.

TEACHING AND SUPERVISION

Involved in teaching at graduate level (since 1996) in colleges and postgraduate level (since 2009) in the University level. I have also been involved in BS, M.Sc., M.Phil. and Ph.D. students thesis supervision. I have supervised so far 50 BS (4 Year Programme), 40 M.Sc and 34 M.Phil students. I have also supervised/co-supervised 10 Ph.D students. Currently 3 Ph.D. and 7 M.Phil students are working under my supervision.

Research students supervised with completions

1. M.Phil /MS Supervised	:	34
2. Ph.D Supervised:		06
3. Ph.D Co-supervised:		04

Research Interests:

Electrochemistry, Spectroelectrochemistry, Conducting polymers, Polymer composites, Thin layer films, photovoltaic, sensors and biosensors, super capacitors, Computational chemistry, Electrochemical water splitting

Patents Granted

1. Salma Bilal, Salma Gul, **Anwar ul Haq Ali Shah**, Intellectual property organization, Government of Pakistan, Patent No: 142054, 2015.
2. Salma Bilal, Imran Khan, **Anwar ul Haq Ali Shah**, Intellectual property organization, Government of Pakistan, Patent No: 142758, 2018.
3. Salma Bilal, **Anwar ul Haq Ali Shah**, Rudolf Holze and Salma Gul, Intellectual property organization, Government of Pakistan, Patent No: 143315, 2020.
4. Salma Bilal, Bushra Begum, Salma Gul, **Anwar ul Haq Ali Shah**, Intellectual property organization, Government of Pakistan, Patent No: 143483, 2021.
5. Salma Bilal, Sami ur Rahman, **Anwar ul Haq Ali Shah**, Intellectual property organization, Government of Pakistan, Patent No: 143906, 2021.
6. Hajera Gul, Salma Bilal, **Anwar ul Haq Ali Shah**, Ulrike Krewer, Intellectual property organization, Government of Pakistan, Patent No: 143871, 2022

Patents Filled.

7. Bilal, S., Fahim, M., Firdous, I., Shah, A. A.: Sodium carboxymethylcellulose: A novel ecofriendly and water soluble binder for high performance graphene-oxide polyaniline composite electrode. Submitted as : Pakistan Patent (application no. 112/2016 dated 17-02-2016).
8. Shah,A.A, Kamran, M., Bilal, S. Anticorrosive soluble polyaniline and process thereof. Filed as Pakistan Patent (application No. 363/2018 dated 25-05-2018).
9. Bilal,S., Firdous, I., Fahim, M., Shah, A.A. Process for synthesis of unique 3D hatched egg nanosized conducting polymer for high performance supercapacitor. Filed as Pakistan Patent (application No. 126/2017 dated 02-03-2017).

10. Bilal, S., Rahman, S., Rose, P. Shah, A.A., Krewer, U. "Light weight, high Performance binder free supercapacitor electrode comprising of conductive polymer modified carbon paper". Filed as Pakistan Patent (Patent Application No: 463/2020 Filling Date: 10-07-2020).
 11. Salma Bilal, Bushra Begum, Anwar ul Haq Ali Shah, Philipp Röse. One pot synthesis of organic-inorganic hybrid nanocomposites with potential energy storage properties. Application no. 545/2021. Filing date 30-07-2021.
 12. Salma Bilal, Aneeta Kainat, Bushra Begum, Anwar ul Haq Ali Shah, Philipp Röse. Ceric Sulphate As Novel Dopant and Oxidant for Chemical Oxidative Synthesis Polyaniline . Application No. 334/2023. Filing date: 31-05-2023.
 13. Salma Bilal, Mahnoor Jehan, Sami Ur Rahman, Anwar Ul Haq Ali Shah. Process for Chemical Oxidative Synthesis of Polypyrrole. Patent Application No. 378/2022 Filing Date: 13-06-2022.
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Publications:

Citations: 5000

h- index: 43

i10 index: 97

2026

1. Amir Muhammad, **Anwar ul Haq Ali Shah**, Salma Bilal, Samia Firdous "Synergistic adsorption of mixed anionic and cationic dyes by polyaniline/CuFe₂O₄ composites" *Materials Chemistry and Physics* 362 (2026) 132686. <https://doi.org/10.1016/j.matchemphys.2026.132686>
2. Uroosa Riaz, Gul Rahman, Sang Youn Chae, **Anwar ul Haq Ali Shah** "Non-stoichiometric three dimensional (Ni,Cd)S hybrid electrodes for high performance supercapacitor application" *Inorganic Chemistry Communications* 186, Part 1 (2026) 116244. (**Impact factor: 5.4**) <https://doi.org/10.1016/j.inoche.2026.116244>
3. Yuanyuan Jin, **Anwar ul Haq Ali Shah** "Non-Iridium-Based Electrocatalysts for the Acidic Oxygen Evolution Reaction: Progress and Perspectives" *ACS Applied Materials & Interfaces* 18, 6 (2026) 9339–9364 (**Impact factor: 8.5**) <https://doi.org/10.1021/acsami.5c23285>
4. Abdu Wahab, Hafiz Muhammad Tofil, Gul Rahman, Dang Le Tri Nguyen, Anwar ul Haq Ali Shah, Oh Shim Joo, *ChemCatChem* 18,11 (2026) e70837. (**Impact factor: 4.1**) <https://doi.org/10.1002/cctc.70837>

2025

5. Imran Khan, **Anwar ul Haq Ali Shah**, Salma Bilal, Philipp Rose "Investigation of energy storage performance and cycling stability of electrochemically synthesized PANI–ZnFe₂O₄ electrodes" *Electrochimica*

- Acta 542 (2025)147440. (Impact factor: 5.6)
<https://doi.org/10.1016/j.electacta.2025.147440>
6. Imran Khan, **Anwar ul Haq Ali Shah**, Salma Bilal, Gul Rahman “Direct electrochemical environmental sensing of inorganic phosphate using zinc ferrite-integrated polyaniline electrode” Surfaces and Interfaces 70 (2025) 106819. (Impact factor: 6.3) <https://doi.org/10.1016/j.surfin.2025.106819>
 7. Imran Khan, **Anwar ul Haq Ali Shah**, Salma Bilal, Philipp Rose “ Potentiostatic synthesis of Polyaniline Zinc and Iron Oxide Composites for Energy Storage Applications” Synthetic Metals 310 (2025) 117784. (Impact factor: 4.6) <https://doi.org/10.1016/j.synthmet.2024.117784>
 8. **Anwar ul Haq Ali Shah**, Javeria Abbas, Muhammad Kamran, Gul Rahman, Salma Bilal “ Titania/Bismuth Vanadate Embedded Polyaniline for Enhanced Electrochemical Energy Storage” Inorganic Chemistry Communications 176 (2025) 114272 (Impact factor: 5.4) <https://doi.org/10.1016/j.inoche.2025.114272>.
 9. Muhammad Kamran, Salma Bilal, **Anwar ul Haq Ali Shah** “Assessment of ZnO doped Polyaniline/Prunus Domestica Reinforced Paint for Corrosion Protection of Mild and Stainless Steel” Journal of Coatings Technology and Research 22 (2025) 651-662. (Impact factor: 2.8) <https://doi.org/10.1007/s11998-024-00996-3>

2024

10. Shah Masood Ahmad, Muhammad Kamran, **Anwar ul Haq Ali Shah**, Salma Bilal “Synthesis, characterization, and corrosion inhibition study of homo and novel copolymers of o-chloroaniline and o-phenylenediamine on a mild steel” Colloid and Polymer Science 302 (2024) 137-149. (Impact factor: 2.3). <https://doi.org/10.1007/s00396-023-05180-4>.
11. Noreen Amir Khan, Gul Rahman, Sangyoun Chae, **Anwar ul Haq Ali Shah**, Oh Shim Joo, Shabeer Ahmad Mian, Akbar Hussain “Boosting Electrocatalytic Overall Water Splitting with Heterostructured MoS₂/NiFe₂O₄ Composite in Alkaline Media” International Journal of Hydrogen Energy, 69 (2024) 261-271. (Impact factor 8.3). Date of Publication 7th May 2024 . <https://doi.org/10.1016/j.ijhydene.2024.05.042>
12. Noreen Amir Khan, Gul Rahman, Sangyoun Chae, **Anwar ul Haq Ali Shah**, Oh Shim Joo, Shabeer Ahmad Mian “Unraveling the Electrocatalytic Response of Zn-Substituted Nickel Ferrite for Overall Water Splitting” ACS Applied Energy Materials 7 (2024) 4960-4974. (Impact factor 5.6) <https://doi.org/10.1021/acs.aem.4c00810>
13. Zalanda Khattak, Hajera Gul, Rizwan Ullah, Salma Gul, **Anwar ul Haq Ali Shah**, Salma Bilal “ Fabrication of Polyaniline/ Titanium Dioxide Nanocomposite Anode for Potential Use in Escherichia coli Inoculated Fuel Cell” Iranian Journal of Chemistry and Chemical Engineering 43, 12 (2024) 4215-4225. (Impact factor: 1.3) <https://doi.org/10.30492/ijcce.2024.2012584.6245>
14. Tanveer ul Haq Zia, Anwar ul Haq Ali Shah, Behisht Ara, Kashif Gul “Label-free immunosensor for detection of hepatitis C (HCV) core antigen using ternary polypyrrole-Ag doped ZnO-exfoliated graphene nanocomposite” Colloids and Surfaces A: Physicochemical and Engineering Aspects 681

2023

15. Huriya Humayun, Bushra Begum, Salma Bilal, **Anwar ul Haq Ali Shah**, philipp Rose “Polyindole Embedded Nickel/Zinc Oxide Nanocomposites for High-Performance Energy Storage Applications” *Nanomaterials* 13 (2023) 618, 1-15 (**Impact factor: 5.3**). <https://doi.org/10.3390/nano13030618>
16. Tanveer ul Haq Zia and **Anwar ul Haq Ali Shah** “Polypyrrole/porous anodized aluminum oxide composite device for ammonia gas sensing” *Synthetic Metals* 296 (2023) 117350. (**Impact factor: 4.4**). <https://doi.org/10.1016/j.synthmet.2023.117350>
17. Shehna Farooq, Salma Bilal, Asif Ali Tahir, **Anwar ul Haq Ali Shah** “Impact of dopant ratio on the energy harvesting activity of polyaniline modified counter electrodes for Pt-free dye-sensitized solar cells” *Electrochemical Science Advances* 3 (2023) e2100155, 1-15. (**Impact factor: 2.9**). <https://doi.org/10.1002/elsa.202100155>
18. Noreen Amir Khan, Gul Rahman, Tung M. Nguyen, **Anwar Ul Haq Ali Shah**, Cham Q. Pham, Minh Xuan Tran, Dang Le Tri Nguyen “Recent development of nanostructured nickel metal-based electrocatalysts for hydrogen evolution reaction: A review” *Topics in Catalysis* 66 (2023) 149-181 (**Impact factor: 2.781**). <https://doi.org/10.1007/s11244-022-01706-2>
19. Humaira Seema, Nadia Khan, **Anwar ul Haq Ali Shah**, Amir Muhammad “Fabrication of self-assembled Prussian blue graphene hydrogel for highly selective removal of radioactive cesium in water: Adsorption study” *Materials Chemistry and Physics* 306 (2023) 128003. **Impact factor: 4.778**. <https://doi.org/10.1016/j.matchemphys.2023.128003>
20. Amjad Khan, Gul Rahman, **Anwar ul Haq Ali Shah**, Sang Youn Chae, Shabir Ahmad mian “Shape Controlled Growth of Hierarchical Ni_xS_y on Stainless Steel Substrate by Chemical Bath Depositon with Enhanced Electrochemical Energy Storage Performance” *New Journal of Chemistry* 47 (2023) 13269-13278. (**Impact factor: 3.3**). <https://doi.org/10.1039/D3NJ01768K>
21. Asim Mehmood, Saraf Khan, Farida Rahayu, **Anwar ul Haq Ali Shah**, Ata ur Rahman, Taj Muhammad, Adnan Khan, Nabi Ullah “Factors effecting and structural engineering of molybdenum nitride-based electrocatalyst for overall water splitting: A Critical Review” *Energy Technology* 11 (2023) 2300182. (**Impact factor: 4.15**). <https://doi.org/10.1002/ente.202300182>.

2022

22. Hira Zaman, **Anwar ul Haq Ali Shah**, Nisar Ali, Gao Zhou, Adnan khan, Farman Ali, Chen Tian Tian, Muhammad Bilal “ Magnetically recoverable poly (methyl methacrylate-acrylic acid)/iron oxide magnetic composites nanomaterials with hydrophilic wettability for efficient oil-water separation” *Journal of Environmental Management*. 319 (2022) 115690.1-11. **Impact factor: 8.7**). <https://doi.org/10.1016/j.jenvman.2022.115690>

23. Muhammad Kamran, Anwar ul Haq Ali Shah, Gul Rahman, Salma Bilal, Philipp Röse “Investigation of Alumina-Doped Prunus domestica Gum Grafted Polyaniline Epoxy Resin for Corrosion Protection Coatings for Mild Steel and Stainless Steel” *Polymers* 14 (2022) 5128, 1-18 (**Impact factor: 5.0**) <https://doi.org/10.3390/polym14235128>
24. Asim Mahmood, Saraf Khan, **Anwar ul Haq Ali Shah**, Gul Rahman, Adnan Khan, Nabi Ullah “ Challenges and innovative strategies related to synthesis and electrocatalytic/ energy storage applications of metal sulfides and its derivatives” *Journal of Electroanalytical Chemistry* 923 (2022) 116760 (**Impact factor: 4.50**). <https://doi.org/10.1016/j.jelechem.2022.116760>
25. Muhammad Kamran, **Anwar ul Haq Ali Shah**, Gul Rahman, Salma Bilal “Potential Impacts of Prunus Domestica Based Natural Gum on Physicochemical Properties of Polyaniline for Corrosion Inhibition of Mild and Stainless Steel” *Polymers* 14 (2022) 3116, 1-20. (**Impact factor: 5.0**). <https://doi.org/10.3390/polym14153116>
26. Bushra Begum, Salma Bilal, **Anwar ul Haq Ali Shah**, Philipp Rose “Synthesis, Characterization and Electrochemical Performance of a Redox-Responsive Polybenzopyrrole@Nickel Oxide Nanocomposite for Robust and Efficient Faraday Energy Storage” *Nanomaterials* 12 (2022) 513. (Impact **factor: 5.3**). <https://doi.org/10.3390/nano12030513>
27. Muhammad Arif, **Anwar ul Haq Ali Shah**, Salma Bilal “Fabrication and Integration of Functionalized N-rGO-Ni/Ag and N-rGO-Ni/Co Nanocomposites as Synergistic Oxygen Electrocatalysts in Fuel Cells” *Nanomaterials* 12 (2022) 585. (Impact **factor: 5.3**). <https://doi.org/10.3390/nano12040585>
28. **Anwar ul Haq Ali Shah**, Sadaf Zia, Gul Rahman, Salma Bilal “Performance Improvement of Gold Electrode towards Methanol Electrooxidation in Alkaline Medium: Enhanced Current Density Achieved with Poly(aniline-co-2-hydroxyaniline) Coating at Low Overpotential” *Polymers* 14 (2022) 305. (**Impact factor: 5.0**). <https://doi.org/10.3390/polym14020305>
29. Latif-ur-Rahman, **Anwar ul Haq Ali Shah**, Afzal Shah, Syed Muhammad Salman, Abdul Khaliq Jan “Synthesis and Spectroscopic Analysis of Au-Ag Alloy Nanoparticles with Different Composition of Au and Ag” *Biointerface Research in Applied Chemistry* 12,1 (2022) 377-390 (Impact **factor: 0.873**).
30. Gul Rahman, Abdur Rahim, Noreen Amir Khan, **Anwar ul Haq Ali Shah**, Burhan Khan, San Youn Chae “Effect of SnO₂ incorporation on the photoelectrochemical properties of α -Fe₂O₃-SnO₂ nanocomposites prepared by hydrothermal method” *Materials Chemistry and Physics* 286 (2022) 126201. (Impact **factor: 4.60**). <https://doi.org/10.1016/j.matchemphys.2022.126201>.
31. Salma Bilal, Wahid Ullah, **Anwar ul Haq Ali Shah**, Hajera Gul, Salma Gul, Rizwan Ullah “Corrosion Inhibition Properties of Sulfonated Polyaniline-Poly(Vinyl Alcohol) Composite on Mild Steel” *Iranian Journal of Chemistry and Chemical Engineering* 41,4 (2022) 1313-1321. [10.30492/ijcce.2021.129062.4193](https://doi.org/10.30492/ijcce.2021.129062.4193) (Impact **factor: 1.903**).
32. Salma Bilal, Hajera Gul, **Anwar ul Haq Ali Shah**, Salma Gul “Analysis of Thermal Decomposition Kinetics and Calculation of Activation Energy for Degradation of Polyaniline-Graphene Oxide Composites-Synergistic Reinforcement on Thermal Stability” *Iranian Journal of Chemistry and*

2021

33. Adeel Mehmood, Gul Rahman, **Anwar ul Haq Ali Shah**, Oh-shim Joo, Shabeer Ahmad Mian “Template-Free Hydrothermal Growth of Nickel Sulfide Nanorods as High-Performance Electroactive Materials for Oxygen Evolution Reaction and Supercapacitors” *Energy & Fuels* 35, 8 (2021) 6868-6879. <https://doi.org/10.1021/acs.energyfuels.1c00262> Impact factor: 4.654).
34. Zainab Najaf, Dang Le Tri Nguyen, Sang YounChae, Oh-Shim Joo, **Anwar ul Haq Ali Shah**, Dai-Viet N.Vo, Van-Huy Nguyen, Quyet Van Le, Gul Rahman “Recent trends in development of hematite (α -Fe₂O₃) as an efficient photoanode for enhancement of photoelectrochemical hydrogen production by solar water splitting” *International Journal of Hydrogen Energy* 46, 45 (2021) 23334- 23357 .<https://doi.org/10.1016/j.ijhydene.2020.07.111> (Impact factor: 7.139).
35. Sami ur Rahman, Philipp Röse, **Anwar ul Haq Ali Shah**, Ulrike Krewer, Salma Bilal, Shehna Farooq “Exploring the Functional Properties of Sodium Phytate Doped Polyaniline Nanofibers Modified FTO Electrodes for High-Performance Binder Free Symmetric Supercapacitors” *Polymers* 13 (2021) 2329 <https://doi.org/10.3390/polym13142329> (Impact factor: 4.967).
36. Tanveer ul Haq Zia , **Anwar ul Haq Ali Shah** “Understanding the adsorption of 1 NLB antibody on polyaniline nanotubes as a function of zeta potential and surface charge density for detection of hepatitis C core antigen: A label-free impedimetric immunosensor” *Colloid and Surfaces A: physicochemical and Engineering Aspects* “ 626 (2021) 127076 , <https://doi.org/10.1016/j.colsurfa.2021.127076> (Impact factor: 5.518).
37. Rizwan Ullah, Sobia Yaseen, Anwar ul Haq Ali Shah, Salma Bilal, Muhammad Kamran, Maheen Rahim “ Anticorrosive polyaniline synthesized using coconut oil as the dispersionmedium” *Materials Chemistry and Physics* 273(2021) 125071. (Impact factor: 4.778). <https://doi.org/10.1016/j.matchemphys.2021.125071>
38. Bushra Begum, Salma Bilal, **Anwar ul Haq Ali Shah**, Philipp Rose “Physical, Chemical, and Electrochemical Properties of Redox-Responsive Polybenzopyrrole as Electrode Material for Faradaic Energy Storage” *Polymers* 13 (2021) 2883. <https://doi.org/10.3390/polym13172883> (Impact factor: 4.967).
39. Tanveer ul Haq Zia , **Anwar ul Haq Ali Shah** “Label-free photoelectrochemical immunosensor based on sensitive photocatalytic surface of Sn doped ZnO for detection of hepatitis C (HCV) anticore mAbs 19D9D6” *Colloid and Surfaces A: physicochemical and Engineering Aspects* “ 630 (2021) 127586. <https://doi.org/10.1016/j.colsurfa.2021.127586> (Impact factor: 5.518).
40. Azeema Munir, Sidra Ayaz, Afzal Shah, Tayyaba Kokab, Faiza Jan Iftikhar, **Anwar-ul-Haq Ali Shah**, Muhammad Abid Zia “Computational Studies of

the Role of Substituents on the Reactivity and Biological Activities of Naphthoic Acid” American Journal of Physical Chemistry 10 (2021) 52-60.

41. Maheen Rahim, Anwar ul Haq Ali Shah, Salma Bilal, Ishrat Rahim, Rizwan Ullah “Highly efficient humidity sensor based on sulfuric acid doped polyaniline-copper oxide composites” Iraninan journal of science and technology, Transactions A: Science 45 (2021) 1981-1991. <https://doi.org/10.1007/s40995-021-01201-5> (Impact factor: 1.553).

2020

42. **Anwar ul Haq Ali Shah**, Sami Ullah, Salma Bilal, Gul Rahman, Humera Seema “Reduced Graphene Oxide/Poly (Pyrrole-co-Thiophene) Hybrid Composite Materials: Synthesis, Characterization, and Supercapacitive Properties” Polymers 12 (2020) 1110. <https://doi.org/10.3390/polym12051110>. **Impact factor: 4.329**
43. Sami ur Rahman, **Anwar ul Haq Ali Shah**, Salma Bilal “Synthesis and Characterization of Polyaniline-Chitosan Patches with Enhanced Stability in Physiological Conditions” Polymers 12 (2020) 2870. <https://doi.org/10.3390/polym12122870>. **Impact factor: 4.329**
44. Sami ur Rahman, Philipp Röse, Mit Surati, **Anwar ul Haq Ali Shah**, Ulrike Krewer, Salma Bilal “3D Polyaniline Nanofibers Anchored on Carbon Paper for High-Performance and Light-Weight Supercapacitors” Polymers 12 (2020) 2705. <https://doi.org/10.3390/polym12112705>, **Impact factor: 4.329**
45. Gul Rahman, Adil Akhtar, Noureen Amir Khan, Sang Youn Chae, **Anwar ul Haq Ali Shah**, Oh-Shim Joo “Direct growth of dual-faceted BiVO₄ microcrystals on FTO-coated glass for photoelectrochemical water oxidation” Optik- International Journal for Light and Electron Optics 224 (2020) 165516, 1-9. <https://doi.org/10.1016/j.ijleo.2020.165516> (**Impact factor 2.443**)
46. Sami ur Rahman, Philipp Röse, **Anwar ul Haq Ali Shah**, Ulrike Krewer, Salma Bilal “An Amazingly Simple, Fast and Green Synthesis Route to Polyaniline Nanofibers for Efficient Energy Storage” Polymers 12 (2020) 2212, 1-19. <https://doi.org/10.3390/polym12102212> **Impact factor: 4.329**
47. Gul Rahman, Zainab Najaf, **Anwar ul Haq Ali Shah**, Shabeer Ahmad Mian “Investigation of the structural, optical, and photoelectrochemical properties of α -Fe₂O₃ nanorods synthesized via a facile chemical bath deposition” Optik - International Journal for Light and Electron Optics 200 (2020) 163454, 1-11. (**Impact factor: 2.443**). <https://doi.org/10.1016/j.ijleo.2019.163454> .
48. Hajera Gul, **Anwar ul haq Ali Shah**, Salma Bilal, Ulrike Krewer, Study on Direct Synthesis of Energy Efficient Multifunctional Polyaniline–Graphene Oxide Nanocomposite and Its Application in Aqueous Symmetric Supercapacitor Devices, Nanomaterials 10 (2020) 118 . <https://doi.org/10.3390/nano10010118> (**Impact factor: 5.076**).
49. Gul Rahman, Wareeda Nawab, Wagma Zazai, Salma Bilal, **Anwar ul Haq Ali Shah**, Shabeer Ahmad Mian “Exploring the Structural and Charge Storage Properties of Ni-ZnS/ZnO Composite Synthesized by One-Pot Wet Chemical Route” Materials Chemistry and Physics 252 (20202) 123203. <https://doi.org/10.1016/j.matchemphys.2020.123203> (**Impact factor: 3.408**).

50. Bushra Begum, **Anwar ul haq Ali Shah**, Salma Bilal “ Tunable electrochemical activity of polyaniline salt by doping anion exchange” Materials International 1(2020) 0044-0051 .
51. Nauman Ali, Nasiha Naz, Ziarat Shah, **Anwar ul Haq Ali Shah**, Adnan Khan, Rubila Nawaz “Selective transportation of molybdenum from model and ore through poly inclusion membrane” Bulletin of the Chemical Society of Ethiopia 34 (2020) 93-104. <https://dx.doi.org/10.4314/bcse.v34i1.9> (Impact factor: 1.320).
52. Hanif ur Rahman, **Anwar ul Haq Ali Shah**, Adnan Khan, Nauman Ali “In situ transport and electrodeposition of Ag(I) on stainless steel electrode across carrier mediated supported liquid membrane” Desalination and Water Treatment 205 (2020) 189-197. DOI: <https://doi.org/10.5004/dwt.2020.26344> (Impact factor: 1.17).
53. Amir Muhammad, **Anwar ul Haq Ali Shah**, Salma Bilal “ Effective adsorption of hexavalent chromium and divalent nickel ions from water through polyaniline, iron oxide and their composites” Applied Sciences 10 (2020) 2882. <https://doi.org/10.3390/app10082882> (Impact factor: 2.474).
54. Naimat Ullah, **Anwar ul Haq Ali Shah**, Fazal Akbar Jan, Rotaba Ansir, Wali Muhammad “Application of Modified PANI-ZnO Composites for NH₃Gas Sensor at Ambient Temperature” Journal of the Chemical Society of Pakistan 42,3, (2020) 390-398. <https://jcsp.org.pk/issueDetail.aspx?aid=a70ab6f5-fda8-43df-92e5-f4595b9686a5>
55. Mo Thi Nguyen, Cam Minh Le, Tuan Minh Nguyen, Hao Hoang Nguyen, **Anwar ul Haq Ali Shah**, Hung Van Hoang “Synthesis and Characterization of CuMnOx-Bentonite as Efficient Catalyst for Oxidation of m-xylene” Journal of the Chemical Society of Pakistan 42, 4 (2020) 504-514. <https://jcsp.org.pk/issueDetail.aspx?aid=dce592b4-d7f2-4abd-adaf-096c8c20712a>
56. Salma Bilal, Adil Jehan, Sami ur Rahaman, **Anwar ul Haq Ali Shah** “Effect of Synthesis Temperature on Properties of Polyaniline” Journal of Scientific and Innovative Research 9, 1 (2020) 22-27 .
57. Salma Bilal, Akhtar Ali Shah, Anwar ul Haq Ali Shah, Hajera Gul, Wahid Ullah, Salma Gul “Dodecylbenzenesulphonic Acid Doped

2019

58. Amir Muhammad, **Anwar ul Haq Ali Shah**, Salma Bilal “Comparative Study of the Adsorption of Acid Blue 40 on Polyaniline, Magnetic Oxide and Their Composites: Synthesis, Characterization and Application” Materials 2019, 12(18) 2854, 1-22, <https://doi.org/10.3390/ma12182854>. (**Impact factor: 3.057**).
59. Hajera Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal “Achieving Ultrahigh Cycling Stability and Extended Potential Window for Supercapacitors through Asymmetric Combination of Conductive Polymer Nanocomposite and Activated Carbon” Polymers 2019, 11(10) 1678, 1-16. <https://doi.org/10.3390/polym11101678>. (**Impact factor: 3.426**)
60. **Anwar-ul-Haq Ali Shah**, Ayesha Inayat, Salma Bilal “Enhanced Electrocatalytic Behaviour of Poly(aniline-co-2-hydroxyaniline) Coated Electrodes for Hydrogen Peroxide Electrooxidation” Catalysts 2019, 9(8), 631 1-17 <https://doi.org/10.3390/catal9080631> (**Impact factor: 3.520**).
61. Shehna Farooq, Asif Ali Tahir, Ulrike Krewer, **Anwar ul Haq Ali Shah**, Salma Bilal “ Efficient photocatalysis through conductive polymer coated FTO counter electrode in platinum free dye sensitized solar cells” Electrochimica Acta 2019, 320, 134544, 1-11. <https://doi.org/10.1016/j.electacta.2019.07.055> (**Impact factor: 6.215**).
62. Hira Zaman, Nisar Ali, **Anwar ul haq Ali Shah**, Xiaoyan Gao, Shizhong zhang, Kun Hong, Muhammad Bilal “Effect of pH and salinity on stability and dynamic properties of magnetic composite amphiphilic demulsifier molecules at the oil-water interface” Journal of Molecular liquids 2019, 290, 111186. <https://doi.org/10.1016/j.molliq.2019.111186> (**Impact factor: 5.065**).
63. Hajera Gul, **Anwar ul Haq Ali Shah**, Salma Bilal “Fabrication of Eco-Friendly Solid-State Symmetric Ultracapacitor Device Based on Co-Doped PANI/GO Composite” Polymers 2019, 11 (8), 1315, 1-20. <https://doi.org/10.3390/polym11081315> (**Impact factor: 3.426**).
64. Salma Bilal, Ayesha Akbar, **Anwar ul Haq Ali Shah** “Highly Selective and Reproducible Electrochemical Sensing of Ascorbic Acid Through a Conductive Polymer Coated Electrode” Polymers 2019, 11(8), 1346, 1-17, <https://doi.org/10.3390/polym11081346>, (**Impact factor: 3.426**).
65. Salma Bilal, Muhammad Arif, Muhammad Saleem Khan, **Anwar ul Haq Ali Shah** “Characterization of Sodium and Potassium Nitrate Contaminated Polyaniline-Poly (Ethylene Oxide) Composites Synthesized via Facile Solution Casting Technique” Materials 2019, 12 (13), 2168, 1-14. <https://doi.org/10.3390/ma12132168>. (**Impact factor: 3.057**).
66. Gul Rahman, Mansoor Khan, Zahid Khan, **Anwar-ul-Haq Ali Shah**, Muhammad Saleem Khan, Luqman Ali Shah “Nickel Oxide-incorporated Polyaniline/Polyvinyl Alcohol Composite for Enhanced Antibacterial Activity” Zeitschrift für Physikalische Chemie 233, 9 (2019) 1261-1274. <https://doi.org/10.1515/zpch-2018-1303> (**Impact factor 2.030**).

67. Amir Muhammad, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Gul Rahman “Basic Blue Dye Adsorption from Water Using Polyaniline/Magnetite (Fe₃O₄) Composites: Kinetic and Thermodynamic Aspects” *Materials* 2019, 12 (11), 1764, 1-26. <https://doi.org/10.3390/ma12111764>. **(Impact factor 3.057)**.
68. Gul Rahman , Zainab Najaf, Asad Mehmood , Salma Bilal , **Anwar-ul-Haq Ali Shah** , Shabeer Ahmad Mian and Gulam Ali “An Overview of the Recent Progress in the Synthesis and Applications of Carbon Nanotubes” *C-Journal of Carbon Research*, 2019, 5 (1),3, 1-31. <https://doi.org/10.3390/c5010003>
69. Nisar Ali, Hira Zaman, Muhammad Bilal, **Anwar- ul-Haq Ali Shah**, Muhammad Shahzad Nazir, Hafiz M.N.Iqbal, Environmental perspectives of interfacially active and magnetically recoverable composite materials - A review. *Science of Total Environment* 670 (2019) 523-538. **(Impact factor 6.551)**. <https://doi.org/10.1016/j.scitotenv.2019.03.209>
70. Muhammad Fahim, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Highly Stable and Efficient Performance of Binder-Free Symmetric Supercapacitor Fabricated with Electroactive Polymer Synthesized via Interfacial Polymerization. *Materials* 2019, 12 (10), 1626, 1-17. <https://doi.org/10.3390/ma12101626>. **(Impact factor 3.057)**.
71. **Anwar-ul-Haq Ali Shah**, Muhammad Kamran, Salma Bilal and Rizwan Ullah “Cost Effective Chemical Oxidative Synthesis of Soluble and Electroactive Polyaniline Salt and Its Application as Anticorrosive Agent for Steel” *Materials* 2019, 12 (09), 1527 <https://doi.org/10.3390/ma12091527> **(Impact factor 3.057)**.
72. **Anwar-ul-Haq Ali Shah**, Saima Shaheen, Muhammad Kamran, Humaira Seema, Rizwan Ullah and Salma Bilal “ Synthesis of soluble and highly thermally stable polyaniline- Titanium dioxide composite via inverse emulsion polymerization” *Journal of the Chemical Society of Pakistan* 41, 6 (2019) 921-931. **(Impact factor 0.393)**.

<https://jcspp.org.pk/issueDetail.aspx?aid=6a8fe706-941f-4802-9c3c-31d4b7f42be1>

2018

73. Salma Bilal, Bushra Begum, Salma Gul and **Anwar-ul-Haq Ali Shah** “ PANI/DBSA/H₂SO₄: A promising and highly efficient electrode material for aqueous supercapacitors” *Synthetic Metals* 235 (2018) 1-15. <https://doi.org/10.1016/j.synthmet.2017.11.004> **(Impact factor 2.526)**.
74. Salma Bilal, Muhammad Fahim, Irum Firdous and **Anwar-ul-Haq Ali Shah** “Insight into Capacitive Performance of Polyaniline/Graphene Oxide Composites with Ecofriendly Binder” *Applied Surface Science* 435 (2018) 91-101. <https://doi.org/10.1016/j.apsusc.2017.11.030> **(Impact factor 4.439)**.
75. Gul Rahman, Oh Shim Joo, Sang Youn Chae, **Anwar-ul-Haq Ali Shah**, Shabeer Ahmad Mian “Enhanced Water Oxidation Photoactivity of Nano-Architected α -Fe₂O₃–WO₃ Composite Synthesized by Single-Step Hydrothermal Method” *Journal of Electronic Materials*, 47 (2018) 2359-2365.

- <https://link.springer.com/article/10.1007/s11664-017-6059-7> (**Impact factor 1.566**).
76. **Anwar-ul-Haq Ali Shah**, Muhammad Owais Khan, Salma Bilal, Gul Rahman, Hung Van Hoang “Electrochemical Co-Deposition and Characterization of Polyaniline and Manganese Oxide Nano Fibrous Composites for Energy Storage Properties” *Advances in polymer Technology* 37, 6 (2018) 2230-2237. <https://doi.org/10.1002/adv.21881> (**Impact factor 2.07**).
 77. Hajera Gul, **Anwar-ul-Haq Ali Shah**, Salma Gul, Jalal Arjomandi, Salma Bilal “Study on the Thermal Decomposition Kinetics and Calculation of Activation Energy of Degradation of Poly(o-toluidine) Using Thermogravimetric Analysis” *Iranian Journal of Chemistry and Chemical Engineering* 37 (2018) 193- 204. [10.30492/ijcce.2018.30883](https://doi.org/10.30492/ijcce.2018.30883) (**Impact factor 0.860**).
 78. Salma Bilal, Wahid Ullah, **Anwar-ul-Haq Ali Shah** “Polyaniline@CuNi nanocomposite: A highly selective, stable and efficient electrode material for binder free non-enzymatic glucose sensor” *Electrochimica Acta*, 284 (2018) 382-391. <https://doi.org/10.1016/j.electacta.2018.07.165> (**Impact factor 5.383**).
 79. **Anwar-ul-Haq Ali Shah**, Shafaq Akhlaq, Murtaza Sayed, Salma Bilal, Nauman Ali “ Synthesis and characterization of polyaniline–zirconium dioxide and polyaniline–cerium dioxide composites with enhanced photocatalytic degradation of rhodamine B dye” *Chemical Papers* 72 (2018) 2523-2538. <https://link.springer.com/article/10.1007/s11696-018-0494-7> (**Impact factor 0.963**).
 80. Hajera Gul, Salma Gul, Salma Bilal and **Anwar-ul-Haq Ali Shah** “ One pot synthesis of highly thermally stable poly(2-methylaniline) for corrosion protection of stainless steel” *Iran J.Sci.Technol. Trans.Sci* 42(2018) 1915-1922 (**Impact factor 0.757**).
 81. Shehna Farooq, **Anwar-ul-Haq Ali Shah**, Salma Bilal “Some insights into the structure and morphology of surfactant-doped poly(o-toluidine)” *Advances in polymer Technology* 37 (2018) 3701-3710. <https://doi.org/10.1002/adv.22154> (**Impact factor 2.07**).
 82. Rizwan Ullah, Salma Bilal, **Anwar-ul-Haq Ali Shah**, Gul Rahman, Khurshid Ali “Ternary composites of polyaniline with polyvinyl alcohol and Cu by inverse emulsion polymerization: A comparative study” *Advances in polymer Technology* 37 (2018) 3448-3459. <https://doi.org/10.1002/adv.22129> (**Impact factor 2.07**).

2017

83. Rizwan Ullah, Habib Ullah, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Khurshid Ali “Oligomeric Synthesis and Density Function Theory of Leucoemeraldine Base form of Polyaniline” *Journal of Molecular Structure* 1127 (2017) 734-741. <https://doi.org/10.1016/j.molstruc.2016.08.009> (**Impact factor 2.011**).
84. **Anwar-ul-Haq Ali Shah**, Nabila Yasmeen, Gul Rahman, and Salma Bilal “High Electrocatalytic Behavior of Ni Impregnated Conducting Polymer Coated Platinum and Graphite Electrodes for Electrooxidation of Methanol”

- Electrochimica Acta 224 (2017) 468-474.
<https://doi.org/10.1016/j.electacta.2016.12.085> (Impact factor 5.116).
85. Hajera Gul, Salma Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal “Poly(o-toluidine) as low cost electrode material for high performance electrochemical supercapacitor” Indian Journal of Chemistry: Section A 56 (2017) 493-500.
<http://op.niscair.res.in/index.php/IJCA/article/view/16203> (Impact factor 0.851).
 86. **Anwar-ul-Haq Ali Shah**, Irum Firdous, Zalanda Khattak, Muhammad Arif, Muhammad Fahim, Salma Bilal “Efficient glucose oxidation on Polyaniline film by *Escherichia coli* with Neutral Red mediator” Journal of the Chemical Society of Pakistan 39 (2017) 820-826.
<https://jcsp.org.pk/issueDetail.aspx?aid=b83cc20d-11aa-442c-b0b5-d835d20d8cf9> (Impact factor 0.327).
 87. Salma Bibi, Salma Bilal, **Anwar-ul-Haq Ali Shah** and Habib Ullah “Systematic Analysis of Poly(o-aminophenol) Humidity sensors” ACS Omega 2, 10 (2017) 6390-6390. <https://doi.org/10.1021/acsomega.7b01027> (Impact factor 2.450).

2016

88. Rizwan Ullah, Salma Bilal, **Anwar-ul-Haq Ali Shah**, Khurshid Ali, Fadi Alakhras “Synthesis and characterization of polyaniline doped with polyvinyl alcohol by inverse emulsion polymerization” Synthetic metals 222 Part B (2016) 162-169. <https://doi.org/10.1016/j.synthmet.2016.10.017> (Impact factor 2.435).
89. **Anwar-ul-Haq Ali Shah**, Nabila Yasmeen, Gul Rahman, Mazhar Mehmood and Salma Bilal “Electrooxidation of methanol at PANI/ POAP Bilayered Structure modified Platinum and Graphite Electrodes” Electrochimica Acta 188(2016)367-377. <https://doi.org/10.1016/j.electacta.2015.11.140> (Impact factor 4.798).
90. Roohul Amin, Salma Bilal, Anwar-ul-Haq Ali Shah “ Synthesis and characterization of thermally stable organic composites of polyaniline with polyethylene oxide” Journal of Chemical Society of Pakistan 38 (2016) 937-943. <https://jcsp.org.pk/issueDetail.aspx?aid=0b44d00d-f576-448e-a9da-52c3f4b3f586> (Impact factor 0.345).
91. Gul Rahman, Shabeer Ahmad Mian, **Anwar-ul-Haq Ali Shah**, Oh-Shim Joo “ Electrocatalytic behavior of glassy carbon electrode modified with Ruthenium nanoparticles and Ruthenium film” Journal of Applied Electrochemistry 46(2016)459-468.
<https://link.springer.com/article/10.1007/s10800-016-0937-1> (Impact factor 2.409).
92. Salma Bilal, Sania Bibi, Rudolf Holze, **Anwar-ul-Haq Ali Shah** “Structural and Spectroscopic Properties of Homo- and Co-oligomers of o-Phenylenediamine and o-Toluidine: Theoretical Insights Compared with Experimental Data” The Journal of Physical Chemistry C 120 (2016) 27141-27147. <https://pubs.acs.org/doi/10.1021/acs.jpcc.6b09393> (Impact factor 4.772).
93. Hajera Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal “Electrochemical behavior of POT in different electrolytes” Journal of Scientific and Innovative Research 5 (2016) 187-192.

2015

94. Shah Masood Ahmad, Salma Bibi, Salma Bilal, Khurshid Ayub, **Anwar-ul-Haq Ali Shah** "Electronic and Spectral Characteristics of Poly(*o*-toluidine-co-*o*-chloroaniline: Density Functional Theory Calculations" *Synthetic Metals* 205 (2015) 153-163. <https://doi.org/10.1016/j.synthmet.2015.04.005> (Impact factor 2.252).
95. Salma Bibi, Habib Ullah, Shah Masood Ahmad, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Muhammad Tahir Asif, Khurshid Ayub "Molecular and Electronic Structure Elucidation of Polypyrrole Gas Sensors" *The Journal of Physical Chemistry C* 119(2015) 15994-16003. <https://doi.org/10.1021/acs.jpcc.6b09393> (Impact factor 4.772).
96. Salma Bilal, Salma Gul, Rudolf Holze and **Anwar-ul-Haq Ali Shah** " An Impressive Emulsion Polymerization Route for the Synthesis of Completely Soluble and Highly Conducting Polyaniline Salts " *Synthetic metals* 206 (2015) 131-144. <https://doi.org/10.1016/j.synthmet.2015.05.015> (Impact factor 2.252).
97. Muhammad Kamran, Habib Ullah, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Asif Ali Tahir, Khurshid Ayub "Combined Experimental and Theoretical Study of Poly(*Aniline-co-Pyrrole*) Oligomers" *Polymer* 72 (2015) 30-39. <https://doi.org/10.1016/j.polymer.2015.07.003> (Impact factor 3.562).
98. Salma Bilal, Salma Bibi, Shah Masood Ahmad, **Anwar-ul-Haq Ali Shah** "Counterpoise-corrected Energies, NBO, HOMO-LUMO and Interaction Energies of Poly(*o*-aminophenol) for Ammonia Sensing by DFT Methods" *Synthetic metals* 209 (2015) 143-149. <https://doi.org/10.1016/j.synthmet.2015.06.027> (Impact factor 2.253).
99. Salma Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal "Effect of High Temperature on the Electrochemical and Optical Properties of Emeraldine Salt Doped with DBSA and Sulfuric Acid" *Journal of Chemistry* 2015 (2015) 1-9. <https://doi.org/10.1155/2015/826358> (Impact factor (0.772).
100. Salma Bilal, Salma Gul, **Anwar-ul-Haq Ali Shah** "Calculation of Particle size distribution of polyaniline salts using imageJ. *Journal of Scientific and Innovative Research* 4 (2015) 17-21.
101. Salma Bilal, Fozia Parveen, **Anwar-ul-Haq Ali Shah** "Chemical Synthesis of Polypyrrole doped with dodecylbenzenesulfonic acid" *Journal of Scientific and Innovative Research* 4 (2015) 33-42.
102. Latif-ur- rehman, Afzal Shah, Rumana Qureshi, Sher Bahadar Khan, Abdullah. M. Asiri, **Anwar-ul-Haq Ali Shah**, M.Saleem Khan, Suzanne Kay Lunsford "Spectroscopic analysis of Au-Cu alloy nanoparticles of various compositions synthesized by chemical reduction method" *Advances in material science and engineering* 2015(2015) 1-8. <https://doi.org/10.1155/2015/638629> (Impact factor 0.744).

2014

103. Salma Bilal, Shehna Farooq, **Anwar-ul-Haq Ali Shah**, Rudolf Holze " Improved solubility, conductivity, thermal stability and corrosion protection properties of poly(*o*-toluidine) synthesized *via* chemical polymerization" *Synthetic metals* 197(2014) 144-153. <https://doi.org/10.1016/j.synthmet.2014.09.003> (Impact Factor = 2.252).

104. Rizwan Ullah, Salma Bilal, Anwar-ul-Haq Ali Shah, Khurshid Ali "Synthesis and characterization of polyaniline doped with Cu II chloride by inverse emulsion polymerization" *Synthetic metals* 198 (2014) 113-117. <https://doi.org/10.1016/j.synthmet.2014.09.024> (**Impact Factor = 2.252**).
105. Habib Ullah, Abdur Rauf, Zakir Ullah, Fazl-i-Sattar, Muhammad Anwar, **Anwar-ul-Haq Ali Shah**, Ghias Uddin and Khurshid Ayub "Density functional theory and phytochemical study of pistgermic acid" *Spectrochimica Acta A: molecular and biomolecular spectroscopy* 118(2014) 210-214. <https://doi.org/10.1016/j.saa.2013.08.099> (**Impact Factor = 2.129**).
106. Mohammad Sohail, Salma Bilal, **Anwar-ul-Haq Ali Shah** "Synthesis and characterization of soluble and thermally stable polypyrrole-DBSA salts" *Journal of Chemical Society of Pakistan* 36 (2014) 976-981. <https://jcsp.org.pk/issueDetail.aspx?aid=6e185bc1-ad73-4587-84ac-6c7fcc479f10> (**Impact Factor = 0.345**).
107. Rizwan Ullah, Graham A. Bowmaker, Cosmin Laslau, Geoffrey I.N. Waterhouse, Zoran D. Zujovic, Khurshid Ali, **Anwar-Ul-Haq Ali Shah**, Jadranka Travas-Sejdic "Synthesis of Polyaniline by using CuCl₂ as Oxidizing Agent" *Synthetic Metals* 198 (2014) 203-211. <https://doi.org/10.1016/j.synthmet.2014.10.005> (**Impact Factor = 2.252**).
108. Habib Ullah, Khurshid Ayub, **Anwar-ul-Haq Ali Shah**, Salma Bilal "Doping-dedoping in polypyrrole: DFT study with hybrid functional" *The Journal of Physical Chemistry C* 118 (2014) 17819- 17830, <https://doi.org/10.1021/jp505626d> **Impact Factor = 4.772**).
109. Rizwan Ullah, G.A. Bowmaker, J.T. Sejdic, Khurshid Ali, **Anwar-ul-Haq Ali Shah** "Synthesis and characterization of polyaniline by using weak oxidizing Agent" *Macromol.Symp.* 339 (2014) 84-90. <https://doi.org/10.1002/masy.201300141> **Impact factor (0.916)**.
110. Salma Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal "Polyaniline-dodecylbenzenesulfonic acid for corrosion inhibition of stainless steel" *Journal of Scientific and Innovative Research* 3 (2014) 519-522. 2013
111. Habib Ullah, **Anwar-ul-Haq Ali Shah**, Salma Bilal and Khursid Ayub "DFT study of polyaniline NH₃, CO₂ and CO gas sensors: Comparison with recent experimental data" *Journal of Physical Chemistry C*, 117(2013) 23701-23711 . <https://doi.org/10.1021/jp407132c> (**Impact Factor = 4.835**).
112. Habib Ullah, **Anwar-ul-Haq Ali Shah**, Khurshid Ayub and Salma Bilal, "Density function theory studyof poly(*o*-phenylenediamine) oligomers" *Journal of Physical Chemistry C*, 117(2013) 4069-4078. <https://doi.org/10.1021/jp311526u> (**Impact Factor = 4.835**).
113. **Anwar-ul-Haq Ali Shah**, Khurshid Ali and Salma Bilal, "Surface tension, surface excess concentration, enthalpy and entropy of surface formation of aqueous salt solutions" *Colloid and Surfaces A: Physicochemical and Engineering Aspects* 417 (2013)183-190. <https://doi.org/10.1016/j.colsurfa.2012.10.054> (**Impact Factor = 2.354**).
114. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze "A Comparative Study of the UV-Vis Spectroelectrochemical Behavior of 2- and 3-Methylaniline During Homo- and Copolymerization with 1,2-Diaminobenzene" *Electrochimica acta* 97(2013)364-377 . <https://doi.org/10.1016/j.electacta.2013.02.139> (**Impact Factor = 4.086**).
115. Habib Ullah, Zakir Ullah, Khurshid Ayub, **Anwar-ul-Haq Ali Shah** and Salma Bilal "Theoretical Insight of Polypyrrole Ammonia Gas Sensor"

Synthetic metals 172 (2013) 14-20.

<https://doi.org/10.1016/j.synthmet.2013.03.021> (Impact Factor = 2.222).

116. Salma Gul, **Anwar-ul-Haq Ali Shah**, Salma Bilal "Synthesis and characterization of processable polyaniline salts." Journal of Physics: Conference series 439(2013) 012002.
117. Akbar Zaman, **Anwar-ul-Haq Ali Shah**, Ihsanullah, Tariq Nawaz "combine effect of hot water and gamma irradiation on the selected nutrients and shelf life of peach" J. Radioanal. Nucl. Chem.298 (2013)1665-1672.
<https://link.springer.com/article/10.1007/s10967-013-2656-y> (Impact Factor = 1.415).
118. Salma Gul, **Anwar-ul-Haq Ali Shah** and Salma Bilal "Calculation of activation energy of degradation of polyaniline-dodecylbenzenesulfonic acid salts via TGA". Journal of Scientific and Innovative Research, Volume 2 (2013) 673.

2012

119. **Anwar-ul-Haq Ali Shah**, Salma Bilal, and Rudolf Holze, "A systematic study of the electrochemical synthesis and spectroelectrochemical characterization of poly(o-chloroaniline) and poly(o-chloroaniline-co-o-toluidine), Synth. Metals 162 (2012) 356-363.
<https://doi.org/10.1016/j.synthmet.2011.12.019> (Impact Factor = 2.109).
120. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze, "A comparative study of the electrochemical behavior of 2-/3-methylaniline during homo- and copolymerization with 1, 2-diaminobenzene" Electrochimica acta 85 (2012) 358-368.
<https://doi.org/10.1016/j.electacta.2012.08.096> (Impact Factor = 3.777).
121. Salma Bilal, Salma Gul, Khurshid Ali and **Anwar-ul-Haq Ali Shah** "Synthesis and characterization of completely soluble and highly thermally stable PANI-DBSA salts" Synth. Metals 162 (2012) 2259-2266.
<https://doi.org/10.1016/j.synthmet.2012.11.003> (Impact Factor = 2.109).

2011

122. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze "Spectroelectrochemistry of Poly(o-Phenylenediamine); Polyaniline Like Segments in the Polymer Structure" Electrochimica acta 56 (2011) 3353-3358. <https://doi.org/10.1016/j.electacta.2011.01.005> (Impact Factor = 3.832).
123. Jalal Arjomandi, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Hung Van Hoang and Rudolf Holze" In situ Raman and UV-Vis spectroscopic study of polypyrrole and poly(pyrrole-cyclodextrin) films in aqueous solution." Spectrochimica Acta A 78 (2011) 1-6.
<https://doi.org/10.1016/j.saa.2009.12.026> (Impact Factor = 2.098).
124. Mohammad Sohail, Salma Bilal, **Anwar-ul-Haq Ali Shah** "Thermogravimetric Study of Polypyrrole-Dodecylbenzene Sulfonic Acid Salt" Conference Issue Materials 2011, Journal of the Pakistan Material Society (2011) 12-15.

2010

125. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze. “Raman spectroelectrochemical study of copolymers of o-phenylenediamine and o-toluidene” *Vibrational Spectroscopy* 53 (2010) 279-284. <https://doi.org/10.1016/j.vibspec.2010.04.009> (**Impact Factor = 2.083**).
126. Afzal. Hussain, P. Akhter, A. S. Bhatti, **Anwar-ul-Haq Ali Shah** and Salma Bilal “Dominant conduction mechanism and the effects of device temperature on electrical characteristics of Al/ZnPc/n-Si structures” *Vacuum* 84 (2010) 975-979. <https://doi.org/10.1016/j.vacuum.2010.01.035> (**Impact Factor = 1.051**).

2009

127. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze “A correlation of electrochemical and spectroelectrochemical properties of poly(o-toluidene). *Electrochimica acta* 54 (2009)4851-4656. <https://doi.org/10.1016/j.electacta.2009.03.072> (**Impact Factor = 3.325**).
128. Khurshid Ali, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Azhar-ul-Haq Ali Shah. “Surface Tensions and Thermodynamic Quantities of Surface Formation of Aqueous Salt Solutions III. Halides of Sodium, Potassium and Ammonium”. *Colloid and Surfaces A: Physicochemical and Engineering Aspects* 337 (2009)194-199. <https://doi.org/10.1016/j.colsurfa.2008.12.023> (**Impact Factor = 1.988**).

2008

129. Khurshid Ali, **Anwar-ul-Haq Ali Shah**, Salma Bilal, Azhar-ul-Haq Ali Shah. “Thermodynamic Parameters of Surface Formation of Some Aqueous Salt Solutions” *Colloid and Surfaces A: Physicochemical and Engineering Aspects* 330 (2008) 28-34. <https://doi.org/10.1016/j.colsurfa.2008.07.020> (**Impact Factor = 1.926**).
130. Salma Bilal, **Anwar-ul-Haq Ali Shah** and Rudolf Holze “A Spectroelectrochemical Study of Homo-/coologimerization and Homo-/copolymers of o- Phenylenediamine and o-Toluidine“, *Journal of Electrochemical Society*. 155 (2008) P89- P96. <https://iopscience.iop.org/article/10.1149/1.2949688> (**Impact Factor = 2.437**).
131. **Anwar-ul-Haq Ali Shah** and Rudolf Holze, “Spectroelectrochemistry of two layered composites of Polyaniline and o-Aminophenol” *Electrochimica acta* 53 (2008) 4642-4653. <https://doi.org/10.1016/j.electacta.2008.01.076> (**Impact Factor = 3.078**).

2006

132. **Anwar-ul-Haq Ali Shah** and Rudolf Holze “Spectroelectrochemistry of Aniline-o-Aminophenol Copolymers” *Electrochimica acta*, 52 (2006) 1374 – 1382. <https://doi.org/10.1016/j.electacta.2006.07.040> (**Impact Factor = 2.955**).
133. **Anwar-ul-Haq Ali Shah** and Rudolf Holze “Poly (o-aminophenol) with two Redox Processes: A Spectroelectrochemical Study” *Journal of Electroanalytical*.

Chemistry 597 (2006) 95-102. <https://doi.org/10.1016/j.jelechem.2006.08.004>.
(Impact Factor = 2.339).

134. **Anwar-ul-Haq Ali Shah** and Rudolf Holze “Copolymers and two layered composites of polyaniline and poly (*o*-aminophenol)” Journal of Solid State Electrochemistry 11 (2006) 38-51. <https://link.springer.com/article/10.1007/s10008-005-0064-0> (Impact Factor = 1.158).

135. **Anwar-ul-Haq Ali Shah** and Rudolf Holze “*In situ* UV-Vis Spectroelectrochemical Studies on the Copolymerization of Aniline and *o*-Aminophenol” Synthetic Metals 156 (2006) 566-575. <https://doi.org/10.1016/j.synthmet.2006.03.001> (Impact Factor = 1.689).

136. **Anwar-ul-Haq Ali Shah** and Rudolf Holze “Electrochemical Preparation and Spectroelectrochemical Characterization of Conducting Copolymers of Aniline and *o*-Aminophenol” Elektrochemische Grundlagenforschung und deren Anwendung in der Elektroanalytik (Proceedings of ELACH7), U. Guth und W. Vonau (Hrsg.), KSI, Waldeim, Germany 2006, S. 49-52.

137. Khurshid Ali, **Anwar-ul-Haq**, Salma Bilal, Shazia Siddiqi. “Concentration and Temperature Dependence of Surface Parameters of Some Aqueous Salt Solutions”. Colloid and Surfaces A: Physicochemical and Engineering Aspects 272 (2006) 105-110. <https://doi.org/10.1016/j.colsurfa.2005.07.014> (Impact Factor = 1.499).

138. Azhar-ul-Haq, Malik A., Khan M. T. H., **Anwar-ul-Haq**, Khan S. B., Ahmad A., Choudhary M. I “Tyrosinase inhibitin lignans from the methanolic extract of the roots of *Vitex negundo* and their structure activity relationship” *Phytomedicine* 13 (2006) 255-260. <https://doi.org/10.1016/j.phymed.2004.09.001> (Impact Factor = 1.403)

2004

139. Azhar-ul-Haq, Abdul Malik, **Anwar-ul-Haq**, Sher Bahadar Khan, Muhammad Raza shah, and Pir Muhammad “Spinocide, New Coumaroyl Flavone Glycoside from *Amaranthus spinosus*” *Arch. Pharm. Res.* 27 (2004) 1216-1219. <https://koreascience.kr/article/JAKO200415875829691.pdf>
(Impact Factor = 0.686).

Conference Contributions with talks

- 1) Elektrochemische Grundlagenforschung und deren Anwendung in der Elektroanalytik (ELACH7) from September 17–20, 2006 in Waldeim, **Germany**
- 2) GDCH-JCF Frühjahrssymposium from March 22–27, 2007 in Chemnitz, **Germany**.
- 3) 8th International and 20th National Chemistry Conference from

February 15 - 17, 2010 at Quaid-I-Azam University **Islamabad.**

- 4) 1st National Conference on Physical and Environmental Chemistry from September 26 - 30, 2010 at Baragali.
- 5) Pakistani & German Universities – Joining Forces for a Better Future DAAD Alumni Seminar from October 29 – 31, 2010, Islamabad.
- 6) First International Symposium on Vacuum Science and Technology, 2-6 November, 2010, Islamabad.
- 7) 1st National Conference on Material Processing, Characterization, Properties and their Economic Potential December 1-3, 2010, **at University of Peshawar.**
- 8) 3rd National Conference on Recent trends in Chemistry, Oct. 17-19, 2011, **at PINSTECH, Islamabad.**
- 9) 10th International and 22nd National Chemistry Conference from Nov. 21-23, 2011 at University of Agriculture, Faisalabad.
- 10) 2nd National Conference on Material Processing, Characterization, Properties and their Economic Potential Nov. 30th-Dec. 2nd, 2011, **University of Peshawar.**
- 11) One day Research Poster Symposium, December 23rd, 2011 at NCE in Physical Chemistry, **University of Peshawar**
- 12) National Science Conference: Roadmap of Cutting Edge Technologies, from January 10-12, 2012 at **PMAS-Arid Agriculture University Rawalpindi.**
- 13) First International conference on Bioenergy at **PMAS-Arid Agriculture University Rawalpindi.** April 18th to 20th 2012.
- 14) 6th Vacuum and Surface Science Conference of Asia and Australia October 9th - 13th 2012 at **Pak-China Centre Islamabad.**
- 15) 2nd Symposium on Recent Trends in Indigenous Chemical Research and Awareness on Data Presentation Skills July 1-5, 2012, At **Baragali Summer Campus University of Peshawar.**
- 16) Seminar for VCs and Alumni of German Universities in KPK at **S. A. Q. Meusam Hall University of Peshawar** 2nd April, 2013.
- 17) 3-Days International Conference on Environmental Science from Pollution to Remediation at Baragali Summer Campus, June 3-5, 2013.

- 18) International symposium on Advance Material, 23-27 September, 2013, At Institute of Space Technology, Islamabad.
- 19) 19th European Symposium on polymer Spectroscopy (ESOPS19) 7-11 July 2013, Prague, Czeck Republic.
- 20) Surface Enhanced Spectroscopies 2014 (SES2014) 7-10 August 2014, Chemnitz, Germany.
- 21) Chemical Trends 2014, October 17, 2014, Department of Chemistry, Lahore University of Management Sciences.
- 22) 25th National and 13th International Chemistry Conference October 20-22, 2014, Institute of Chemistry, University of Punjab, Lahore
- 23) 3rd Asean-Pakistan Conference on Material Science (APCoMS-3) NUST, 25-27 November 2014.
- 24) Bayreuth Polymer Symposium (BPS 15), September 20-22, 2015 in Bayreuth University, Germany.
- 25) Conductive plastics 2015 from 29th June to 1st July 2015 in Düsseldorf Germany.

Honorary Talks

1. **Honourary talk on “Rational Design of Electrode Materials for Electrocatalytic Generation of Hydrogen and Electrochemical Energy Storage” on 22nd July 2024 at Karlsruhe Institute of Technology (KIT), Institute for Applied Materials Electrochemical Technologies (IAM-ET), Germany.**
2. **Honourary talk on “Rational Design of Electrode Materials for Boosting Hydrogen Production Through Overall Water Splitting ” on 22nd August 2024 at Department of Chemistry, University of Hildesheim, Germany.**

Books Chapters Authored

Encyclopedia of Applied Electrochemistry (2014) (Publisher Springer Verlag GmbH Germany)

Chapter: **UV-Vis Spectroelectrochemistry**, Article ID: 303671 Chapter ID: 242

Collaborating Institutions and Institutes for Short Research Stay

- 1. Prof. Dr. Ulrike Krewer**
Karlsruhe Institute of Technology (KIT), Institute for Applied Materials
Electrochemical Technologies (IAM-ET), 76131 Karlsruhe, Germany.
(Visiting scientist from 1st July 2024 to 31st August 2024).
- 2. Prof. Dr. Ulrike Krewer**
Technische Universität Braunschweig, Institute of Energy and Process Systems
Engineering, 38023 Braunschweig, Germany
(short research stay from 15th October 2018 to 15th November 2018)
- 3. Prof. Dr. Rudolf Holze**
Institute für Chemie/AG Electrochemie, Chemnitz University of Technology,
Chemnitz, Germany. (Short research stay from 15 July 2013 to 31 July
2013).
- 4. Dr. Samia Firdous**
Department of Chemistry, University of Hildesheim, Germany
- 5. Dr. Nisar Ali**
Key Laboratory for Palygorskite Science and Applied Technology of Jiangsu
Province, National & Local Joint Engineering Research Center for Deep
Utilization Technology of Rock-salt Resource,
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- 6. Prof. Dr. Afzal Shah**
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Referees

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