Dr. Naveed Zafar Ali

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ACADEMIC QUALIFICATIONS

❖ **Doctor of Natural Sciences (Dr.rer.nat / Ph.D.) in Chemistry - *Inorganic Solid State Chemistry***

April 2006 – March 2011.

- *Max Planck Institute for Solid State Research Stuttgart, Germany*
- *Advisor: Prof. Dr. Dr. h. c. Martin Jansen*
- *Titel Awarded: Dr. rer. nat. (Doctor of Natural sciences)*
- *Field of Specialization: Inorganic Solid State Chemistry / Material Science*
  http://elib.uni-stuttgart.de/opus/volltexte/2011/6189/index.html
- *Tasks: High Pressure & High temperature Synthesis of novel inorganic solids (AMO_2 Family of Compound; A=Alkali Metals, M=3d Transition metals), Study of interplay between crystal structure, structural phase transition, thermal and magnetic properties of materials.*
- *Grades: 1 / Excellent / Sehr gut / Magna cum laude.*

❖ **Master of Philosophy (M.Phil.-Inorganic Chemistry - by research)** –
February 2001 – February 2003.

- *Quaid-i-Azam University, Islamabad, Pakistan*
- *Advisor: (Late) Prof. Dr. M. Jaffar*
- *Field of Specialization: Inorganic Chemistry / Analytical Chemistry*
- *Tasks: Environmental assessment and monitoring of toxic trace elements in tanneries' polluted soils by AAS spectrometric techniques*
- *Grades: CGPA = 3.7 (Good)*

❖ **Master of Science (M.Sc.-Inorganic Chemistry - by research)** –
January 1999 – January 2001

- *Quaid-i-Azam University, Islamabad, Pakistan*
- *Advisor: (Late) Prof. Dr. M. Jaffar*
- *Field of Specialization: Inorganic Chemistry / Analytical Chemistry*
- *Grades: 71% marks (Good)*

WORK EXPERIENCE

❖ **07/2021 – 10/2021** — **Guest Scientist (DAAD-Fellow)**

- *Federal Institute for Material Research & Testing BAM-Adlershof, BERLIN, GERMANY.*
- *Fellowship of DAAD (**D**eutscher **A**kademischer **A**ustausch **D**ienst) Bonn Germany.*
- *Research Title: Exploring the Dynamics of Molecular Rotors & its incorporation as Inorganic Solid Electrolyte SSE in all solid state Lithium ion batteries.*

❖ **01/2014 – to Date** — **Principal Scientifist / General Manager (Technical).**

- *Department: Experimental Physics / Nano-Sciences Dept.*
- *Organization: National Centre for Physics, Quaid-I-Azam University Campus, Shahdra Valley Road, Islamabad, 44000 – Pakistan.*
- *Research Direction: Electrochemical Investigation of MOFs based composites for energy storage applications;-Ultra High Temperature Ceramic Coatings & Anticorrosive marine coatings for defense related applications-& "Development of the next generation of cathode materials (AMO2-family) to drive the transition towards electric vehicles."*

❖ **04/2019 – 07/2019** **Trainee Scientist ("Max IV Lab Lund Sweden")**

MAX IV Next-generation Synchrotron Radiation facility

- *DanMAX is a Danish X-ray materials science beamline, dedicated to in situ and operando experiments on real materials employing Powder X-ray diffraction, Full-field imaging, absorption, phase and diffraction contrast tomography.*
- *Fellowship of Swedish Institute, Lund University for training and exchange at MAX IV Laboratory in Sweden.*
- *Research Title: Studying MOFs and Lithium Vanadate as novel electrode materials for Lithium Ion Batteries employing the complimentary PXRD and Pair Distribution analysis using Topas-6 software.*

❖ **11/2017 – 12/2018** **Postdoctoral Researcher ("Guest Researcher")**

HUMBOLDT-UNIVERSITÄT ZU BERLIN · BAM

- *Bundesanstalt für Materialforschung und -Prüfung Adlershof , 12489 BERLIN, GERMANY.*
- *Fellowship of Graduate School of Analytical Sciences(SALSA), an excellence Initiative of the Deutsche Forschungsgemeinschaft (DFG) at Humboldt University zu Berlin.*
- *Research Title: Development of Next Generation Metal-Organic Frameworks architectures as novel Hydrogen storage materials for fuel cell technology using mehanochemical route.*

❖ **12/2012 – 12/2013** **Assistant Professor (IPFP)__(Interim Placement of Faculty Program)**

NATIONAL CENTRE FOR PHYSICS · ISLAMABAD

- *Nanoscience and Catalysis Department, National Centre for Physics,*
- *Quaid-I-Azam University Campus, Shahdrah Valley Road, Islamabad, Pakistan.*
- *Research Direction: Effect of dopants on the structural phase transition, Raman modes, and optical properties of various polymorphs of TiO_2 nanoparticles.*

❖ **03/2011 – 11/2012** **Postdoctoral Researcher (Max Planck Fellowship)**

- *Max Planck Institute for Solid State Research, Stuttgart, Germany*
- *Advisor: Prof. Dr. Dr. h. c. Martin Jansen*
- *Research Direction: Synthesis, exploration and characterization of low dimensional novel inorganic solids & materials exhibiting unconventional chemical and physical properties. Interplay between Crystallographic Structure & magnetism.*

❖ **01/2004 – 12/2005** **Assistant Manager (Technical)**

- *Department: Research & Development (Technical / Chemistry)*
- *Organization: National Engineering and Sci. Commission, Islamabad, Pakistan.*
- *Worked as Group Incharge Zn-AgO Battery Production Unit (Defence Application).*

INTERNATIONAL RESEARCH POJECTS ACCOMPLISHED at World's Top Synchrotron Beamlines as "PI"

❖ (Proposal-ID: 20160058.)- XRF/EXAFS proposal -
Project Title: Synchrotron X-ray absorption fine structure (XAFS) and X-ray fluorescence (XRF) studies of Vanadium valence & local environment in Lithiated vanadium oxide battery materials.
Beamline: XRF/EXAFS beamline of the Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) Jordan. *PI:* Dr. Naveed Zafar Ali & *Co-Proposer*: Dr. M. Arshad and Dr. Ishaq Ahmad.

❖ (Proposal-ID: 20080186.)-Joint MS-HRPT (X+n) proposal -
Project Title: Structures and phase transitions in isostructural series of compounds $KFeO_2$, $RbFeO_2$ and $CsFeO_2$
Beamline: Synchrotron Powder Diffraction (SLS) and Neutron Powder Diffraction (NPD-HRPT) beamline at Paul Scherrer Institute (PSI) Switzerland.
PI: Dr. Naveed Zafar Ali & *Co-Proposer*: Dr. Denis Sheptyakov(Beamline Scientist-PSI) & M. Jansen (MPI-FKF).

❖ (Proposal-ID: 20101220). -
Project Title: A neutron diffraction study of structural and magnetic ordering in K_2FeGaO_4.
Beamline: Neutron Powder Diffraction (NPD-HRPT) beamline at Paul Scherrer Institute (PSI) Switzerland.
PI: Dr. Naveed Zafar Ali & *Co-Proposer*: Dr. Denis Sheptyakov(Beamline Scientist-PSI) & M. Jansen (MPI-FKF).

❖ (Proposal-ID: 20121434.)-
Project Title: Exploring magnetic anomalies in the strongly coupled antiferromagnetic chain material $CsCoO_2$
Beamline: Muon Spin Resonance (μSR) beamline at GPS Instrument, Paul Scherrer Institute (PSI) Switzerland & Rutherford Appleton Laboratory,UK. *PI:* Dr. Naveed Zafar Ali *Co-Proposer*: Dr. Tom Lancaster (Durham Univ., UK).

❖ (Proposal-ID: 20195522.)-
Project Title: Complimentary X-ray Diffraction & EXAFS analysis for the structure elucidation and degradation studies of Inorganic halide perovskites materials
Beamline: XRF/EXAFS & PXRD beamline of the Elletra Synchrotron-Light Source Italy.

NATIONAL RESEARCH POJECTS-JOINTLY FUNDED BY NATIONAL CENTRE FOR PHYSICS-"Principal Investigator"

❖ ***Smart corrosion protection composite coatings for Marine environment applications.***
Smart corrosion protection advance composite coatings for Marine environment applications will initially aimed at advancing the science of corrosion free coatings for maritime crafts namely submarine structures, navy submersibles, offshore oil and gas industry equipment and ground support machinery at the oceanfront environment.

❖ ***Advanced Ultra High Temp. Ceramic composites (UHTCs) materials for extreme environment applications.***
Ultra High Temperature Ceramic composites (UHTCs) materials for extreme environment applications is aimed at developing the new materials that can withstand the higher operational temperatures generated rapidly by burning oxidizing fuels or aeroheating experienced by nose tips & propulsion system components of hypersonic reentry vehicles.

❖ ***High-performance membranes with enhanced pH & thermal stability for liquids and gaseous mixture separation***
Polyamide and Polyimide based mix matric membranes (MMM) are developed with MOFs / ZIFs based nanoporous structures incorporated as filler to tune the porosity of polymer composite mix matrix membrane commensurate to preferred application of selected gaseous mixture separation, selectivity/ permeability and cation removal applications.

❖ ***Development of Next Generation Metal-Organic Frameworks (MOFs / ZIFs) architectures as novel Hydrogen storage materials for hydrogen-centric fuel economy***. To prevent catastrophic climate change, search for new renewable energy sources is boosted in the last decade. The benefits of a hydrogen based economy are well documented, since H_2 is an abundant zero emission fuel, & possesses a higher energy density than conventional fossil fuels. H_2-storage has been identified as a bottleneck of the hydrogen economy. Our research is focused on exploring novel porous materials for cost effective & optimal H_2-storage with enhanced safety & energy efficiency. The study is executed jointly with Federal Institute for material research & testing Berlin Adlershof Germany.

SOFTWARE AND PROGRAMMING SKILLS

- Rietveld refinement of powder diffraction data (Gui & .INP Launch mode) using Bruker software TOPAS 6.
- Pair Distribution Analysis (PDF) technique for characterizing the atomic- scale structure (real space analysis of diffraction data) of disordered crystalline materials using PDFgetx3 and PDF GUI and **TOPAS 6** softwares.
- XRF and EXAFS data analysis using DEMTER software suite for the data processing (Athena) and Data analysis(Artemis).
- Origin 8.1 *(Data Analysis and Graphing Software)*
- Diamond & Atoms *(Crystal and Molecular Structure Visualization)*
- Various Crystallographical softwares *(Match, Pearson, Topas-4.1, ShelxTL, EVA-Brucker, WinXPOW –Stoe, MAPLE* etc.)

LANGUAGES SKILLS

- *English: (Certificate IELTS Score = 6.5)*
- *German / Deutsch: (Zertifikat Deutsch_ Goethe Institute Mannheim, Germany)*
- *Video: https://drive.google.com/file/d/0B3u0jOUQQYxdYkp5U1VHUjE3WjdhNFlqRTBiU0cxZm9OQ2pF/view*
- *Urdu: Mother Tongue*

AWARDS & HONOURS

❖ Australian Nuclear Science and Technology Organization (**ANSTO**) NSW Australia: Short Research Stay (**May,01-26, 2023**): Delivered an Invited talk at ACNS, ANSTO. NSW Australia, May 11, 2023, Host: **Prof. Vanessa Patterson**. Australian Centre for Neutron Scattering ANSTO Australia; **=>**Delivered an Invited talk at School of Chemistry at the University of Sydney, Australia; Host: **Prof. Christopher D. Ling**, School of Chemistry, University of Sydney, Australia; (Friday May 19, 2023). **=>**Delivered an Invited talk at The Commonwealth Scientific and Industrial Research Organization (CSIRO), Lindfield NSW Australia. Host: **Dr. Mihaela Grigore**, **CSIRO**. NSW Australia. (Friday May 19, 2023)

❖ Delivered an Invited Seminar talk and conducted Rietveld Refinement Workshop with 3x-sessions at Institute of Microengineering & Nanoelectronics (IMEN) at University Kebangsaan Malaysia (UKM) Malaysia. (**May 27-June 02 2023**):

❖ Awarded funding from **Max Planck Society (MPG)**, Munich Germany, to conduct joint "JOINT INTERNATIONAL SCHOOL on Basics and Applications of the Rietveld Method & Pair Distribution Function Analysis in Material Science - ISBARM-2022" in joint collaboration with MPI-FKF Stuttgart & National Centre for Physics (NCP) Islamabad Pakistan. **(July 2022)**. http://nzali.com/images/EP%20Poster%20copy.jpg

❖ Awarded the **DAAD** (German Academic Exchange Service) fellowship for three months "under the programme Research Stays for University Academics and Scientists, "**2021**" to work on Next Generation Solid Electrolyte for All Solid State Lithium Ion Batteries at BAM **Berlin, Germany (July 2021)**.

- **MAX IV-LAB Lund Sweden**; Short Research Fellowship (April-July **2019**): DanMAX is a Danish X-ray materials science beamline for complimentary Powder X-ray diffraction, phase & diffraction contrast Tomography techniques.
- **ESRF-Grenoble,France**; Short Research Stay (Feb.-March **2018**): Research Group-SoM (Structure of Materials) ID22:

  To learn Pair Distribution Function(PDF) Analysis [Pdfgetx3 +PDFGUI] from powder data retrieved using 2-D detector & polishing the Rietveld Refinement Skills / macro-library with Prof. Andrew Fitch on TOPAS-5. (Feb. March **2018**)
- Postdoctoral Fellowship from **Humboldt Universitaet zu Berlin**, jointly with BAM, Adlershof Berlin -Germany, for research stay to work on novel MOFs for Hydrogen storage for Fuel cell applications. **(Nov. 2017**).
- Fellowship from Brigham Young University (BYU) Provo, **UTAH-USA**, for collaborative research stay **(July 2016)**.
- Awardee of Pakistan Science Foundation (PSF) travel grant to attend American Crystallographic Association (ACA) meeting in 21st—27th July 2016 Denver Colorado, **USA (2016)**.
- Awardee of ICMR Scholarship for Summer School on Inorganic Materials for Energy Conversion and Storage, Univ. of California, Santa Barbara, **UCSB-USA (2012)**.
- Registered as an External Examiner and Co-Supervisor for Graduate students approved by the Advanced studies & research Board of **Quaid-I-Azam University Islamabad, Pakistan**.
- Award of Recognition from ICDD (Int'l Centre for Diffraction Data) for significant contribution (4 powder patterns) to the Powder Diffraction File Release, **Pennsylvania, USA (2012)** and (1 powder patterns) **2022** .
- Fellowship for the ^{10th}Paul Scherrer Institute Summer School on Condensed Matter Research, Zug, **PSI Switzerland (2011)**
- Postdoctoral Fellowship from Max Planck Institute for Solid State research **(MPI-FKF) Stuttgart Germany** for research stay in Jansen's Lab to work on low dimensional magnetic oxides. **(March 2011).**
- Recipient of Lady Noon Scholarship for Doctor of Philosophy in Inorganic Chemistry at **University of Oxford**, **(2005)** United Kingdom. (Offer declined over Max Planck Institute).

PUBLICATIONS

- Imosobomeh L. Ikhioya; **Naveed Zafar Ali**; Sroosh Tahir; Shahbaz Afzal, Attaullah Shah, Ishaq Ahmad, Fabian I. Ezema, Electrochemical engineering of ZIF-7 electrode using ion beam technology for better supercapacitor performance, **Journal of Energy Storage,** Volume 90, Part A, 111833, 15 June (**2024**).
- Zahira Bano, Muhammad Akram, **Naveed Zafar Ali**, Muhammad Usman Khan, Fengyun Wang, Linrui Li, Mingzhu Xia, Sustainable porous graphene/Co-MOF for the removal of water pollutants: Combined theoretical and experimental studies, **Journal of Water Process Engineering,** Volume 59, 104982, March (**2024**). https://www.sciencedirect.com/science/article/pii/S2214714424002149
- Saba Ibrar; **Naveed Zafar Ali**; Ernest O. Ojegu; Ogo B. Odia; Imosobomeh L. Ikhioya; Ishaq Ahmad, *Assessing High-Performance Energy Storage of the Synthesized ZIF-8 and ZIF-67*, Volume 3, Issue 4 , November 2023, Pages 294-307 (**2023**). https://jaoc.samipubco.com/article_182740.html
- Zahira Bano, **Naveed Zafar Ali,** Sidi Zhu; Fengyun Wang; Mingzhu Xia, M. Asim Khan, *Electrochemical and adsorption properties of 3D hierarchical porous graphene prepared by direct carbonization of maleic acid*, **Ceramics International**, 48 (6), 8409-8416, (**2022**), DOI:https://doi.org/10.1016/j.ceramint.2021.12.048
- Sehrish Kanwal, Zareen Akhter, **Naveed Zafar Ali**, Rizwan Hussain, Samina Qamar, ***New Journal of Chemistry***, 46, 14557-14564, (**2022**). https://doi.org/10.1039/D2NJ02219B
- Sehrish Kanwal, Zareen Akhter, **Naveed Zafar Ali***, Rizwan Hussain, Samina Qamar, ***New Journal of Chemistry***,: 46, 17082, (**26 August, 2022**) https://doi.org/10.1039/D2NJ90122F https://pubs.rsc.org/en/content/articlelanding/2022/nj/d2nj90122f
- Amna Bashir, Ambreen Naz, M. Sultan, **Naveed Zafar Ali**, et.al., *Influence of Manganese and Nickel doping on Optical and Electric Properties of CuO Nanostructures for Optoelectronic Applications*, ***International Journal of Nanoparticles,*** 14(1), 13-30, (**2022**). *DOI:* 10.1504/IJNP.2022.122938
- Uzma Nazir, Zareen Akhter, **Naveed Zafar Ali**, Rizwan Hussain, Faroha Liaqat, Alisha Tahir, Samina Qamar, *Corrosion inhibition studies of ferrocenyl Schiff bases in a mild acidic medium through experimental methods and DFT calculations,* ***New Journal of Chemistry***, **46**, 3925-3938 (**2022**) https://pubs.rsc.org/en/content/articlelanding/2022/nj/d1nj05612c/unauth
- Muhammad Asjad, Muhammad Arshad., **Naveed Z. Ali**, et.al., *An intriguing case of morphology control and phase transitions in TiO_2 nanostructures with enhanced photocatalytic activity,* ***Materials Chemistry and Physics***, 265, 124416, **(2021)**. https://www.sciencedirect.com/science/article/pii/S0254058421001991

- F. T.Thema, Ishaq Ahmad, R. H. Ahmad, M. Arshad, **Naveed Z. Ali**, Matthe-ur-Rahman, M. Maaza, *ZnO Doped Graphite Nanocomposite via Agathosma Betulina Natural Extract with Improved Bandgap and Electrical Conductivity: Experimental Investigation*, **New Visions in Science and Technology**, 1 (11), 114-122, (**2021**). https://stm.bookpi.org/NVST-V1/article/view/3208

- Sana W., **Naveed, Z. Ali**, M. Etter, et.al., *Synthesis, Characterization and Biological Studies of Ether–Based Ferrocenyl Amides and their Organic Analogues, **CRYSTALS**,* 10(6), 480, **(2020)**. https://www.mdpi.com/2073-4352/10/6/480

- S Akbar., S. K Hasanain, O Ivashenko, **Naveed Z. Ali**, P Rudolf, et.al., *Defect ferromagnetism induced by lower valence cation doping: Li-doped SnO_2 nanoparticles, **RSC ADVANCES**, 10, 26342-26348* **(2020)**. https://pubs.rsc.org/en/content/articlehtml/2020/ra/d0ra03644g

- Sehrish Kanwal, **Naveed Zafar Ali**, Rizwan Hussain, Faiz U. Shah, Z. Akhter, *Poly-thiourea formaldehyde based anticorrosion marine coatings on Type 304 stainless steel, **Journal of Materials Research and Technology (JM&RT)**,* 9(2), 2146-2153. **(2020)**. https://www.sciencedirect.com/science/article/pii/S2238785419309184

- **Naveed Zafar Ali**, Branton J. Campbell, and Martin Jansen, *Topotactic, pressure-driven, diffusion-less phase transition of layered $CsCoO_2$ to a stuffed cristobalite type configuration*, ***Acta Crystallographica. Section B*** B75, 704-710. **(2019)**. https://doi.org/10.1107/S2052520619008436

- Uzma Nazir, Z. Akhter, **Naveed Zafar Ali**, Faiz U. Shah, *Experimental and theoretical insights into the **corrosion** inhibition activity of novel Schiff bases for aluminum alloy in acidic medium , **RSC Adv., 9(62),** **36455** **(2019)**.*

- Kevin Linberg, **Naveed Zafar Ali**, Martin Etter, Klaus Rademann,& Franziska Emmerling, *A comparative study of the ionic cocrystals NaX (α-D-glucose)2 (X=Cl, Br, I)*, ***Crystal Growth & Design*** 19 (8), 4293-4299. **(2019).** https://pubs.acs.org/doi/abs/10.1021/acs.cgd.8b01929 ***&*** **(Oct. 2019).** https://pubs.acs.org/doi/10.1021/acs.cgd.9b01199

- Julia Stroh, **Naveed Zafar Ali**, Christiane Maierhofer,& Franziska Emmerling, (2019), *Ettringite via Mechanochemistry: A Green and Rapid Approach for Industrial Application*, **ACS Omega**, 4 (4), pp. 7734–7737, **(2019)** *doi: 10.1021/acsomega.9b00560*

- Julia Stroh, Torvid Feiler, **Naveed Zafar Ali**, Manuel E. Minas,& Franziska Emmerling, *Mechanistic Insights into a Sustainable Mechanochemical Synthesis of Ettringite*, ***Chemistry OPEN***, 8, pp. 1012–1019, **(2019)** *doi: https://doi.org/10.1002/open.201900215*

- Nitasha Komal, Zahida Malik, **Naveed Zafar Ali** and Abdul Chaudhary (2019), *Synthesis, characterization & properties of hierarchically assembled antimony oxyhalides nanonetworks*, ***Materials Research Express***, 6 06503. **(2019)**. *doi: https://doi.org/10.1088/2053-1591/ab0da9*

- S. Akbar, S. K. Hasanain, **Naveed Zafar Ali**, and P. Rudolf *et.al*, (2019), *Defect ferromagnetism in SnO_2:Zn^{2+} hierarchical nanostructures: correlation between structural, electronic and magnetic properties, **RSC Adv.**,* 9, 4082-4091. **(2019)** *doi: 10.1039/C9RA00455F*

- M. A. Khan, Z. Rehman, M Arshad, **N. Z Ali**, et.al., (2018) *Photocatalytic dehydrogenation of formic acid on CdS nanorods through Ni and Co redox mediation under mild conditions ". **ChemSusChem**,*11(15),2587-2592 **(2018)** *doi: https://doi.org/10.1002/cssc.201800583*

- Ghulam Jaffari, Adnan Tahir, **Naveed Zafar Ali**, Awais Ali, and Umar Qurashi. (2018), *Effect of Cr-N codoping on structural phase transition, raman modes and optical properties of TiO_2 nanoparticles*". ***Journal of Applied Physics***, 123, 161541 **(2018)** *doi: https://doi.org/10.1063/1.5003448.*

- Shahzad Hussain, S.K. Hasanain, G. H. Jaffri, **Naveed Zafar Ali**, *et.al*, (2017), *Anomalous Temperature Dependence of Magnetic Coercivity and structure property correlations in $Bi_{0.75}A_{0.25}FeO_3$ (A=Sr, Pb, and Ba) system, **Journal of Material Chemistry C**,* vol.5, pp. 9451-9464 **(2017)**. *doi:http://dx.doi.org/10.1039/C7TC02956J*

- Thema FT, Ishaq A., Ahmad R. H., Arshad M., **Ali. N. Z.**, Mattheur-Rahman and Maaza M., , *ZnO Doped Graphite Nanocomposite via Agathosma Betulina Natural Extract with Improved Bandgap and Electrical Conductivity. **Nanomed & Nanotechnol*** (*ISSN: 2574-187X*) 2017, 2(4): 000129. **(2017)**. https://medwinpublishers.com/NNOA/NNOA16000129.pdf

- Ishaq Ahmad, Shehla Honey, **Naveed Zafar Ali**, *et al.*, *Improvement of optical transmittance and electrical conductivity of silver nanowires by Cu ion beam irradiation, **Materials Research Express,*** **4(7)**, 075055 **(2017)**. *doi:https://doi.org/10.1088/2053-1591/aa7e60*

- Hussain S., Khan, F. A., **Ali, N. Z.** *et al.*, *Strain driven structural phase transformation and correlation between structural, electronic, and magnetic properties of $Bi_{1-x}Ba_xFeO_3$ ($0 \leq x \leq 0.30$) system*, ***Journal of Alloys & Compounds,*** **701**, 301–309. **(2017)**. http://www.sciencedirect.com/science/article/pii/S0925838817301536
- Honey S., T. T. Force, Ahmad I., **Ali, N. Z.** *et al.*, *γ-Rays Irradiation Induced Structural and Morphological Changes in Copper Nanowires*, ***Journal of Nanomaterials***, 2016,1-9 **(2016)**. http://dx.doi.org/10.1155/2016/6134801

- Etter M., Nigar,A., **Ali, N. Z.**, Akhter Z., Dinnebier R.E., *Synthesis and structural perspective on new ferrocenyl amides*, ***Solid State Sciences***, **55,** 29-35. **(2016)**. doi:10.1016/j.solidstatesciences.2016.01.011

- Shahzad Hussain, S.K. Hasanain, G. H. Jaffri,, **Ali, N. Z.**, Siddique, M., and Shah, S. I., *Correlation between structure, oxygen content and the multiferroic properties of Sr doped $BiFeO_3$*, ***Journal of Alloys & Compounds***, **622**, 8–16. **(2015)**. doi: http://dx.doi.org/10.1016/j.jallcom.2014.10.029

- **Ali, N. Z.**, Williams, R. C., Xiao,F., Clark, S. J., Lancaster,T., Blundell, S. J., Sheptyakov, D. V., Jansen, M., *The magneto-structural relationship in the tetrahedral spin chain oxide $CsCoO_2$*, ***Phys. Rev. B***, **91** (2), 024419 **(2015)**. doi:http://dx.doi.org/10.1103/PhysRevB.91.024419;http://arxiv.org/abs/1410.3686

- Naz, A., Rizwan, S.A., **Ali, N. Z.**, Bier, T. A., Ullah, H., *Using carbon nanotubes in self-compacting paste systems,* ***Proceedings of the First International Conference on Construction Materials and Structures, Johannesburg, South Africa***, 697-702 **(2014)**. doi: 10.3233/978-1-61499-466-4-697 ; http://ebooks.iospress.nl/publication/38315

- Xiao, F., Lancaster,T., Baker, P. J., Pratt, F.L., Blundell, S.J., Möller, J.S., **Ali, N. Z.**, Jansen, M., *Magnetic transition and spin dynamics in the triangular Heisenberg antiferromagnet α-$KCrO_2$*, ***Phys. Rev. B***, **88** (18), 180401 **(2013)**. doi:10.1103/PhysRevB.88.180401 & http://arxiv.org/pdf/1307.1377v1.pdf

- **Ali, N. Z.**, Nuss, J., Jansen, M., *A new polymorph of Potassium Chromate(III), β-$KCrO_2$, and reinvestigation of α-$KCrO_2$*, ***Z. Anorg. Allg. Chem.*** **639** (2), 241-245. **(2012).** http://onlinelibrary.wiley.com/doi/10.1002/zaac.201200476/abstract

- **Ali, N. Z.**, Nuss, J., Kremer, R. K., Jansen, M.,*$CsCoO_2$ featuring a novel polyoxocobaltate(III) anion based on a two-dimensional architecture of interconnected tetrahedra*, ***Inorganic Chemistry,*** **51** (22), 12336–12342 **(2012)**. http://pubs.acs.org/doi/abs/10.1021/ic301637w

- **Ali, N. Z.**, Sirker,J., Nuss, J., Horsch, P., Jansen, M., *Spin exchange dominated by charge fluctuations of the Wigner lattice in the newly synthesized chain cuprate $Na_5Cu_3O_6$*, ***Phys. Rev. B***, **84**, 035113 **(2011).** doi:10.1103/PhysRevB.84.035113, & http://arxiv.org/abs/1103.1588

- **Ali, N. Z.**, (2011) *New ternary alkalioxometallates of the first-row transition-metal elements through the azide nitrate route*, ***Ph.D. Dissertation***, -March 2011. pp.1-274 **(2011)**. http://elib.uni-stuttgart.de/opus/volltexte/2011/6189/

- Nuss, J., **Ali, N. Z.**, Wedig U., Jansen, M., *Prediction of new structure candidates of quasi one-dimensional Wigner crystals $Na_{1+x}CuO_2$ by enumeration*, ***Scientific highlights of Max-Planck Institut für Festkörperforschung,*** Stuttgart **(2011).** http://www.fkf.mpg.de/88112/V_03_14.pdf

- **Ali, N. Z.**, Nuss, J., and Jansen, M., *Crystal structure and raman spectroscopy study of $K_5[CuO_2]CO_3$*, ***Z. Anorg. Allg. Chem***. **637**, 183-185 **(2011)**. doi:10.1002/zaac.201000377

- **Ali, N. Z.**, Nuss, J., Denis Sheptyakov and Jansen, M., *The $AFeO_2$ (A = K, Rb and Cs) family: A comparative study of structures and structural phase transitions*, ***Journal of Solid State Chemistry***, **183** (3), 752-759 **(2010)**. ***Appeared on the cover letter of Journal*** doi:10.1016/j.jssc.2010.01.022

- Scheptyakov, D., **Ali, N. Z.**, Jansen, M., (2010), *A neutron diffraction study of structural and magnetic transformations in $AFeO_2$ (A = K; Rb and Cs)*, ***Journal of Physics: Condensed Matter***, **22**, 426001 **(2010)**. doi: 10.1088/0953-8984/22/42/426001

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SELECTED CONFERENCES / ORAL TALKS / POSTER ABSTRACTS

- Naveed. Z. Ali, Delivered an Invited talk at ACNS, Australian Nuclear Science and Technology Organization (ANSTO) NSW Australia, **May 11, 2023**.
  Host: Prof. Vanessa Patterson. Australian Centre for Neutron Scattering ANSTO Australia.
- Naveed. Z. Ali, Hold a technical meeting with Prof. Alison Edward on various aspects of collaboration in the field of structural chemistry & chemical crystallography. Host: Prof. Alison Edward, Australian Centre for Neutron Scattering ANSTO Australia.**May16,2023**
- Naveed. Z. Ali, Delivered an Invited talk at School of Chemistry at the University of Sydney, Australia. Host: Prof. Christopher D. Ling, School of Chemistry, University of Sydney, Australia. **Fri. May 19, 2023.**
- Naveed. Z. Ali, Delivered an Invited talk at The Commonwealth Scientific and Industrial Research Organization (CSIRO), Lindfield NSW Australia. Host: Dr. Mihaela Grigore, CSIRO. NSW Australia. **Friday May 19, 2023.**
- Naveed. Z. Ali, Monday. Delivered an Invited Seminar talk at Institute of Microengineering & Nanoelectronics (IMEN) at University Kebangsaan (UKM) Malaysia, Host: Prof. Azman Jalar, UKM Malaysia. **May 29, 2023**
- Naveed. Z. Ali, Conducted & Lead the Rietveld Refinement Workshop with 3x-sessions at IMEN National University of Malaysia. Host: Prof. Dr C. F. Dae & Dr. Dilla Berhanuddin, University of Kebangsaan UKM, Malaysia. **Tuesday May 29, 30, 2023**.
- Naveed. Z. Ali, Scientific Secretary, **International School on Rietveld Refinement (ISBARM-22)** , jointly organized by MPG (Max Planck Society) & National Centre for Physics (NCP) July 27-29 2022. http://ncp.edu.pk/isbarm-2022.php
- Naveed. Z. Ali, **Collaborative Research on secondary Batteries,** with Ravnsbæk Group, University of Odense SDU, Denmark, June-July-**2019.**
- Naveed. Z. Ali, **Invited Lecture series**, Make & Measure in Analytical Sciences 2018, Advance Courses in "the analysis of powder diffraction data using TOPAS software" taught to group of Students and SALSA fellows of Humboldt University zu Berlin, Oct.08-12, **2018**., Berlin, Germany .
- Naveed Z. Ali, Pair distribution function (PDF) analysis workshop, October **2018**, Max Planck Institute, Germany.
- Naveed Zafar Ali, **Invited Talk** at the annual scientific meeting of the American crystallographic Association from 22-26th July, 2016 at Denver, Colorado, USA.
  https://aca.confex.com/aca/2016/webprogrampreliminary/Paper1052.html
- Naveed Zafar Ali, Collaborative academic stay from 10th-21th July-2016 at Dept. of Physics, Brigham Young University (BYU)Provo, UTAH, USA. http://nzali.com/images/USA_2016.pdf
- Naveed Zafar Ali, 38th International Nathiagali Summer College (INSC) on Physics and Contemporary Needs, (24th June- July 06th, 2013). Islamabad,: http://www.ncp.edu.pk/insc/gallery/insc-38.php
- Naveed Zafar Ali, *et al.*, 19th Meeting of the Scientific Advisory Board, Max Planck Institute for Solid State Research, Stuttgart, Germany (Nov. 5-7, 2012)
- Naveed Z.Ali,9th TOPAS Bruker Users´Meeting & hands-on sessions,Bad Herrenalb, Germany (Nov.8-11,2011)
- Naveed Zafar Ali *et al.*, 13th European Conference of Solid-State Chemistry, Lund, Sweden (Sept.25-28, 2011).
- Naveed Zafar Ali *et al.*, Workshop, Probing Phase Transitions using Photons, Muons and Neutrons, Institute Montana Zugerberg in Zug, Paul Scherrer Institute – Switzerland (13-22 August 2011).
- Naveed Zafar Ali, J. Nuss, D. Scheptyakov and M. Jansen. Gordon Research Conference: Solid State Chemistry, Oxford, United Kingdom (Sept-2009).
- Naveed Zafar Ali, Invited Talk, Hirschegg Seminar, Kleinwalsertal, Austria (May22-25, 2008).

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