

# Curriculum Vitae

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**Dr. Sumaira Kanwal**

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## Professional Profile

- Accomplished career demonstrating consistent success as a researcher and educator at the higher education levels. Outstanding track record in assuring student success.
  - Effective communicator with excellent planning, organizational, and negotiation strengths as well as the ability to lead, reach consensus, establish goals, and attain results.
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## Education:

Degree	Board/Institute	Year	Marks/Division	Major Subjects
Matric	BISE Lahore	2001	1 <sup>st</sup> Div	Physics,Biology,Chemistry
Intermediate	BISE Lahore	2004	1 <sup>st</sup> Div	Physics,Biology,Chemistry
Bachelors	Punjab University	2006	2 <sup>nd</sup> Div	Botany,Zoology,Chemistry
Master (Coal Technology)	Punjab University	2008	CGPA 3.69	Coal Chemistry, Clean Coal Technology, Coal Combustion Technology
M.Phil (Environmental Sciences)	Punjab University	2011	CGPA 3.70	Solid Waste Management, Environmental Engineering, Environmental Impact Assessment & Strategic Environmental Assessment
PhD (Environmental Sciences)	Punjab University	2020	CGPA 3.96	Global Warming & Climate Change, Geographical Information System and Remote Sensing, Environmental Management System
B.Ed	Allama Iqbal Open University,	2009	1 <sup>st</sup> Div	Evaluation,Guidance & Research,Educational Psychology & Curriculum, Perspectives of Education

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## Professional Experience

Organization	Post held	Period served	
		From	To
University of Narowal	<b>Assistant Professor (BPS-19)</b>	15-12-2021	date
Institute of Energy & Environmental Engineering, University of the Punjab Lahore.	<b>Lecturer (on visiting)</b>	20-07-2018	28-5-2021
Institute of Energy & Environmental Engineering, University of the Punjab, Lahore.(formerly known as Centre for Coal Technology)	<b>Lecturer (on contract)</b>	12-10-2011	19-07-2018
Institute of Energy & Environmental Engineering, University of the Punjab, Lahore. (formerly known as Centre for Coal Technology)	<b>Research Scholar</b>	01-04-2009	11-10-2011

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## List of Publications

1. Integrated energy planning and modeling (IEPM) for sustainable electricity generation in Pakistan: Challenges and limitations Sana Bashir\*, **Sumaira Kanwal\***, Hassan Zeb, Zaeem Bin Baber, Asma Majeed, Energy Exploration & Exploitation, 2022. DOI: <https://doi.org/10.1177/01445987221105098>
2. Physio-chemical evaluation and Co-combustion efficiency of different biomass waste fractions with indigenous coal blends for utilization as alternative fuel, Global Nest Journal, DOI: <https://doi.org/10.30955/gnj.003479>
3. Asma Majeed, Adila Batool, Nawaz Chaudhry, **Sumaira Kanwal**, 2022. The Carbon Footprint of a Public Sector University Before and During the COVID-19 Lockdown, Global Nest Journal. DOI: <https://doi.org/10.30955/gnj.004222>
4. **Sumaira Kanwal**, Effect of Torrefaction Conditions on the Physicochemical Characterization of Agricultural Waste (Sugarcane Bagasse), Waste Management 88(2019) 280-290. DOI: <https://doi.org/10.1016/j.wasman.2019.03.053>
5. **Sumaira Kanwal**, Physicochemical Characterization of Thar Coal and Torrefied Corn Cob, Energy Exploration & Exploitation 2019, DOI: <https://doi.org/10.1177/0144598719834766>
6. **Sumaira Kanwal**, Influence of relative humidity and temperature on grindability of Pakistani and Afghani coals 2017, The Journal of Energy and Environmental Science. 132 (2017) 663-668 DOI: <https://sites.google.com/site/usanewscorp/home/influence-of-relative->
7. Sana, H., **Kanwal, S.**, Akhtar, J., Nawaz, S., Sheikh, N., & Munir, S., 2017. Evaluation of the washability characteristics of Khushab coal (Pakistani) by heavy

- media separation process. International journal of Energy& Environment Volume: 28 issue: 5-6, page(s): 598-607. DOI: <https://doi.org/10.1177/0958305X17714151>
8. Sana, H., **Kanwal, S.**, Akhtar, J., **Haider, R.**, Nawaz, S., Sheikh, N., & Munir, S., **2016**. *Bio-Ethanol Production from Ligno-Cellulosic Biomass (Rice Hulls and Wheat Straw) and Chemical Characterization of Pyrolysed Bio Chars*. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects. Volume 39, 2017, Issue 5. DOI: <https://doi.org/10.1080/15567036.2016.1225138>
  9. Wahab, S. Nawaz, K. Shahzad. J. Akhtar, **S. Kanwal**, S. Munir, N. Sheikh,; Desulphurization and demineralization of Lakhra Coal by molten caustic leaching, Energy sources, Part A. Recovery, utilization, and environmental effects, 37, **2015**. DOI: <https://doi.org/10.1080/15567036.2013.837547>
  10. S. Nawaz, **S. Kanwal**, U. Rahim, N. Sheikh, K. Shahzad, and J. Akhtar, **2014**. Identification of Macerals in Lakhra and Chamalang Coals in Pakistan Energy Sources, Part A, 36:2660–2665. DOI: <https://doi.org/10.1080/15567036.2013.770107>
  11. Khurram Shahzad, **Sumaira Kanwal**, Shafqat Nawaz, Naseer-ud-Din Sheikh, Shahid Munir,; Effect of moisture and coal blending on the hardgrove Grindability index of Pakistani Coals, International Journal of coal preparation and utilization, 34, **2014**. DOI: <https://doi.org/10.1080/19392699.2013.776961>
  12. Shafqat Nawaz, **Sumaira Kanwal**, Usman Rahim, N. Sheikh, Khurram Shahzad ,2013. Impact of Coal and Rice Husk Ash on the Quality and Chemistry of Cement, Journal of Pakistan Institute of Chemical Engineers , 40 (1) **2012**, 69-78 DOI: [https://inis.iaea.org/search/search.aspx?orig\\_q=RN:44098265](https://inis.iaea.org/search/search.aspx?orig_q=RN:44098265)
  13. Imran Ashraf, Sumaira Kanwal, M. Khurram Shahzad, N. Sheikh, S. Munir,(2012). Upgradation of Dandot Coal by Heavy Media Separation. In Proceedings of International conference on Engineering Sciences, ICES 2012, 28-29 February, Lahore

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## Workshops and Seminars

- Two day workshop on “Promoting Research Excellence in Academics across Pakistan, conducted by Higher Education Commission
- Workshop on “Research Management” conducted by Higher Education Commission Quality Enhancement Cell & Institute of Quality and Technology Management.
- 4<sup>th</sup> Symposium on Engineering
- Workshop on Integrated Management System conducted by Asian Productivity Organization.
- Workshop on Communication Skills conducted by Higher Education Commission and Learning Innovation Division.
- World Environment Day Seminar.
- International Conference on Engineering Sciences(ICES) Institute of Chemical Engineering & Technology University of the Punjab

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## Trainings/Experimental Skills

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Acquired the training of following equipment:

- Digital Bomb Calorimeter
- CHNSO Analyzer
- Gas Chromatograph
- Thermogravimetric Analyzer
- Flue Gas Analyzer
- Hard groove Grindability Index
- Free Swelling Index Furnace
- FTIR Analyzer
- Helium Pycnometer
- BET Surface Analyzer
- MagMill
- Ash Fusion Analyzer
- ASTM Standard Furnaces

### **Commercial Testing /Students Research Thesis**

- Completed proximate and ultimate analyses of about 400 coal samples of Punjab Mineral Company for the revaluation and re-estimation of Punjab Coal Reserves, the project was supervised by Snowden Company, Australia.
- Conducted experiments of student's research thesis on most modern/sophisticated machines, which the students are prohibited to handle
- Supervised almost 18 students in their M.Sc. research projects.

### **Administrative Assignments**

- Prepared NOC case for M.Phil. Coal Technology, and got NOC from HEC.
- Prepared NOC case for M.Sc. Energy & Environmental Engineering and got NOC from HEC.
- Coordinated the installation, training, and successful operations of newly purchased laboratory equipment.
- Remained member of the departmental examination committee and purchase committee for 5 years.

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### **Award**

University Gold Medal in M.Sc. Coal Technology (2010)

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### **M.Sc. Research Thesis Supervised**

- Coal cleaning by froth flotation
  - Up gradation of coal through leaching with KOH and HCl
  - Effect of Physical (Mag Mill) and chemical (Leaching) separation on characterization of Khushab Coal
  - Upgradation of Lakhara Coal by Using Magg Mill and Hydro cyclone.
  - Desulfurization and Demineralization Of Khushab Coal by Combination Techniques (Magnetic Separation and Leaching)
  - Effect of different Leaching agents on quality and grinding properties of low rank Pakistani coals (Duki ,Khushab,Ghari Habib)
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- Effect of Leaching agents on mineral matter and grinding properties of indigenous coals
- Comparative study of agglomeration on Chamalang coal by using edible castor and non-edible cotton oil
- Effect of Torrefaction on Characterization of Coal & Biomass Blends
- Effect of agglomeration on Mainwali coal by using palm oil
- Effect of Biomass on Coking Characteristics of Indigenous Non-Coking Coal
- Beneficiation of Darra Adam Khel Coal By Froth Flotation
- Extraction of Lignin for Rice Husk and Its Combustion Characteristics Before And After Blending With Lignite Coal.
- Physiochemical Characterization of Torrefied Agricultural waste and Its Comparison with Thar Coal.
- Characterization of Coal and Rice Husk Mixtures
- Optimization of Mag Mill & Flotation Cell. For Deashing And Desulfurization of Khushab Coal

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#### **M.Phil. Research Thesis Supervised**

- Influence of torrefaction on the physicochemical characterization of Thar Coal
- Evaluate the Combustion behavior of Mango seed by using TGA

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#### **References**

##### **1. Dr.Nawaz Chaudhry**

Professor Emeritus

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University of the Punjab,Quaid-i-Azam Campus Lahore.

##### **2. Hamed Sattar**

Professor

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