

Confidential

RÉSUMÉ

Muhammad Usman Rahim PhD

Recent Chemical Engineering graduate with excellent
track record in solid fuel analysis and research

Muhammad Usman Rahim PhD

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Recent Chemical Engineering Graduate Seeking an Opportunity to Contribute in Energy Sector

- **Sharp analytical mind with a keen eye for detail**
- **Highly developed problem solving skills**
- **Dedicated and determined, with a can-do approach**

OVERVIEW

I am extremely practical and motivated with a record of high achievement and experience in solid fuel analysis and research skills. I am currently seeking an opportunity to expand my career where I can apply my theoretical knowledge and practical skills for solid fuel analysis, evaluation and utilization in sustainable manner.

EDUCATION SUMMARY

Curtin University, Bentley, WA

Doctor of Philosophy – Chemical Engineering 2010-2014

University of Punjab, Lahore, Pakistan

Master of Philosophy – Environmental Science 2008 - 2010

Master of Science – Coal Technology 2005 - 2007

Bachelor of Science – Engineering group 2001 - 2003

EXPERIENCE & ACHIEVEMENTS

- **Assistant Professor** (Previously Lecturer) at Centre of Coal Technology, University of the Punjab, January 08 - To Date.
- Delivering three courses in the M.Sc. Coal Technology Program including 'Coal Characterization', 'Coal Combustion Technology' & 'Clean Coal Technology'.
- Established a coal characterization laboratory with principle instruments purchased and installed being a bomb calorimeter, a gas chromatograph, an elemental analyser, a thermo gravimetric analyser (TGA) and microscopes for coal maceral analysis, CRI-CSR, Particle size analyser, .
- Developed coal processing laboratory with major instruments including coal crusher, coal pulveriser and HGI apparatus

KEY STRENGTHS

- **Diverse technical capabilities and practical management skills** – gained through research and practical experience.
- **Excellent communication and interpersonal skills** – able to relate to technical and non-technical people on all levels and work in multi-disciplinary project teams.
- **Highly developed organisational and time management skills** – able to process complex information and juggle multiple responsibilities to meet project deadlines.
- **Advanced computing and written communication skills** – with experience in the documentation and interpretation of testing outcomes.
- **Knowledge of OH&S and Quality Assurance** – with experience in identification, safe handling, storage and disposal of hazardous chemicals.
- **Dynamic research capabilities** – received a letter of commendation by the Chancellor of Curtin University for significant contribution in the field of Chemical Engineering
- **Overall a high achiever** – Degree in Chemical Engineering, and finalist in the WA JCEC Inaugural Postgraduate Research Excellence Award presented by Engineers Australia.

SUMMARY OF APPLIED KEY COMPETENCIES

- Coal and Biomass Analysis
- Furnace Design and Operation
- Coal Testing Instrument Use
- Coal Sampling
- Coal Supply Chain Management
- Creative Thinking
- Data Analysis
- Effective Communication
- Industry Knowledge
- Focus on safety
- Project Management
- Team Work
- Strong Problem Solving Skills
- Strong work ethic
- Self - Assessment

MAJOR RESEARCH PROJECTS EXPERIENCE

Research Projects include:

- **Quantification of Chlorine in solid fuels and its release behaviour during pyrolysis Australia 2014**
Outstanding research outcomes are achieved during this PhD project at Curtin University. This study produced 5 high quality peer reviewed journal papers and 3 conference presentations.
This project was not only awarded by "Chancellor letter of commendation award" but also the innovative approach of this research received acknowledgement by Science Network WA through a communication titled '**Revamped technique improves fuel testing processes**'.
- **Study on Coal and Soil Analysis for VSBK Operation in Pakistan 2010**
Briefly, the object of the study was to conduct a focused approach to define the coal and soil properties, how they react and thermodynamics of the kiln to elaborate the involved ceramic changes while firing clay made bricks.
- Successfully worked as part of a team and as an external collaborator from 2003 to 2005 with the Sudhaar-ITA Alliance in the US Department of Labour funded project titled '**Addressing Child Labour through Quality Education for All (ACL – QEFA)**.
In this project, I contributed in two major activities including the development of interactive pedagogy based teaching manual for primary science as well as planning, implementation, monitoring and reporting of the vocational Training Component of the project.

KEY PUBLICATIONS

- **Rahim, M. U.;** Gao, X.; Wu, H., Improved Eschka Combustion Method for Chlorine Determination in Solid Fuels. Fuel 2014, Volume 129, Pages 314-317.
- Gao, X.; **Rahim, M. U.;** Chen, X.; Wu, H., Significant contribution of organically-bound Mg, Ca, and Fe to inorganic PM10 emission during the combustion of pulverized Victorian brown coal. Fuel 2014, Volume 117, Part A, Pages 825-832.
- **Rahim, M. U.;** Gao, X.; Wu, H., A Method for the Quantification of Chlorine in Low-Rank Solid Fuels. Energy & Fuels 2013, Volume 27, issue 11, Pages 6992-6999.
- **Rahim, M. U.;** Gao, X.; Garcia-Perez, M.; Li, Y.; Wu, H., Release of Chlorine during Mallee Bark Pyrolysis. Energy & Fuels 2012, Volume 27, issue 1, Pages 310-317.
- **Rahim, M. U.;** Gao, X.; Wu, H., Release of chlorine from the slow pyrolysis of NaCl loaded cellulose at low temperatures. Proceedings of the combustion institute 2015, Volume 35, issue 3, Pages 2891–2896.

CONFERENCE PRESENTATIONS

- Delivered at the 35th International Symposium on Combustion 3 - 8 August 2014 at San Francisco USA, as an oral presentation – '**Release of Chlorine from the slow pyrolysis of NaCl-loaded Cellulose At low temperatures**' by **Usman Rahim**, Gao, X & Wu H.
- Delivered at the University Club of Western Australia Australian Combustion Symposium, 6 - 8 November 2013 – '**Chlorine released during Biomass Pyrolysis**', by **Usman Rahim**, Witham, M, Chen, X, Gao, X & Wu, H.

CONSULTANCIES

- Developed pre-vocational manual and imparted training to brick kiln workers for Japan International Cooperation Agency (JICA) in Punjab Literacy Promotion Project, 2010.
- Facilitated in selection of materials and trained brick workers for the Implementation of vertical shaft brick kiln technology in Pakistan (VSBK) for EEBP (Energy Efficient Brick Production)
- Developed manual for teaching primary science based on interactive pedagogy and conducted vocational training program in ACL-QEFA, a United States of America -Department of Labor (US-DOL) funded project, 2004-2007.

ACADEMIC ACHIEVEMENTS

Summary of Master of Science (Coal Technology) Degree – academic subjects completed and grading's

| | | | |
|---|-----|-----------------------------------|-----|
| – Coal Chemistry | A | – Coal Characterization Lab | A + |
| – Applied Maths & Computer Applications | A + | – Coal Processing Technology Lab | A |
| – Applied Maths & Computer Applications Lab | A + | – Coal Combustion Technology | A + |
| – Research Thesis | A + | – Coal Combustion Technology Lab | A + |
| – Financial Marketing & Resource Management | A + | – Coal Conversion Technology - II | A+ |
| – Clean Coal technology Lab | A | – Coal Geology | B |
| – Coal Characterization | B + | – Coal Mining - I | B + |

EXTRACTS OF TESTIMONIALS

“The thesis you submitted for the degree was highly praised by examiners who agreed that the research was of an exceptionally high standard. It is a credit to Curtin University to have researchers of your calibre and I have no doubt that your outstanding efforts have contributed to the research reputation of this University”.

Mr Colin Beckett MA Cantab FIEAust, Chancellor, Curtin University, WA

“As a student he consistently displayed his dedication to purposeful study in all the phases of Coal Technology...I found him intelligent, hardworking and a dutiful young man. Moreover, punctuality, sincerity and obedience have been his outstanding qualities”.

Dr. Naseeruddin Sheikh, Retired member Technology, Pakistan Council of Scientific and Industrial Research

“On the basis of his academic performance and grip over his field of discipline, he was appointed as lecturer on a contract basis...his performance as a teacher in this centre has been exemplary because of his very clear concept of the subject. He has been awarded Faculty Development Program Scholarship for PhD studies...”

Prof. /Dr. Shafqat Nawaz, Director, Centre for Coal Technology, University of Punjab, Lahore

ADDITIONAL INFORMATION

Computer Skills: Microsoft Suite and Internet Application

Interests: Reading, Researching, Movies & Cricket

Referees: **Dr. Shafqat Nawaz**, Professor, Centre for Coal Technology, University of the Punjab, Lahore
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