

Institute of Chemical Engg. & Tech.,
University of the Punjab
Lahore - Pakistan

Work Phone: 0092-42-99230303

EDUCATION

- 1972 - 1982 **Matric (SSC), Science** with First Division / Grade A,
Government High School Dullewala District Bhakkar
(Sargodha Board)
- 1982 - 1984 **F.Sc., Pre Engineering** with First Division / Grade A,
Government College Bhakkar (Sargodha Board)
- 1986 - 1991 **B.Sc. Chemical Engineering** with First Division / Grade A,
Punjab University Lahore - Pakistan
- 1999 - 2000 **M.Sc. Chemical Engineering** with First Division / Grade A,
Punjab University Lahore - Pakistan
- 2001 - 2003 **M. Sc. Computer Science** with CGPA 3.3,
Punjab University Lahore – Pakistan
- 2004 - 2008 **Ph.D, Chemical Engineering,**
Title: Vacuum Gas Carburizing - Fate of Hydrocarbons,
University of Karlsruhe (Germany)

DISTINCTIONS

- 2008 **PhD**
"Sehr Gut" in PhD. In German Grading System for PhD
degrees "Sehr Gut" (Very Good) is the top grade
- 2000 **M.Sc. Engg.**
First position in M.Sc. Engg. examination in order of merit
- 1991 **B.Sc. Engg.**
First position in Final Professional examination in order of
merit & Overall First position in Chemical Engineering
discipline
- 1989 **B.Sc. Engg.**
Third position in 3rd professional examination in order of merit
- 1987 **B.Sc. Engg.**
First position in First Professional examination in order of merit
- 1982 **SSC (Matric)** First position in School

AWARDS

- 2000 **Gold Medal**
From Punjab University for first position in M. Sc. Engg.
- 2004 **Higher Education Commission (HEC) Scholarship**
Scholarship was awarded for PhD studies in Germany with the

cooperation of DAAD on the basis of GRE type test and interview by Professors from German Universities

- 2001 **Ministry of Science & Technology Scholarship**
Scholarship was awarded for M.Sc. Computer Science studies on merit based on GRE type test
- 1991 **Merit Scholarship**
From Punjab University in Final Professional of B.Sc. Chemical Engineering
- 1989 **Merit Scholarship**
From Punjab University in Third Professional of B.Sc. Chemical Engineering
- 1987 **Merit Scholarship**
From Punjab University in First Professional of B.Sc. Chemical Engineering

COMPUTER

SKILLS

Computer Education & Training

(i) M. Sc. Computer Science from Punjab University Lahore

(ii) Six months postgraduate computer training from UGC Islamabad

Operating systems

- (a) MS Windows
- (b) Linux

Chemical Engg. & Tech. related Softwares

Fluent, Gambit, Detchem, Homrea, Chemkin, Cantera, Aspen, Tecplot, ChemCAD,

Other Softwares

Matlab
MS Office
Web Development

Programming Languages

- a) Visual Basic
- b) Fortran
- c) C & C++

Hardware

- a) Assembling of a PC.
- b) Networking

LANGUAGES

- i. Urdu
- ii. English
- iii. German
- iv. Punjabi

LANGUAGE COURSES

1. Qualified German language course level A2 conducted by GOETHE-INSTITUT Karachi with 77% marks
2. Attended a three months language course at interDaf e.v. am Herder-Institut University of Leipzig Germany
3. Attended an IELTS preparation course at British Council Lahore

PROFESSIONAL AFFILIATIONS

- i) Member Pakistan Engineering Council (PEC)
- ii) Member American Institute of Chemical Engineers (AIChE)
- iii) Member Pakistan Institute of Chemical Engineers (PIChE)
- iv) Member ASM International (2007-2008)
- v) Member International Association of Engineers (IAENG)
- vi) Member Editorial Board Journal of Faculty of Engineering and Technology (JFET), Punjab University

EMPLOYMENT

Mar 2010 - Present	Professor - Institute of Chemical Engineering & Technology Punjab University Lahore
Aug 2001 – Feb 2010	Assistant Professor - Institute of Chemical Engineering & Technology Punjab University Lahore
Oct 2004 - Aug 2008	PhD Research Scholar - Engler-Bunte-Institut, Division of Fuel Chemistry and Technology, University of Karlsruhe, Germany (under the supervision of Professor Rainer Reimert and Professor Olaf Deutschmann)
Feb 1995 - Jul 2001	Lecturer – Institute of Chemical Engineering & Technology Punjab University, Lahore
Nov 1992 - Jan 1995	Senior Instructor (Chemical) - Technical Education Wing, Government of Punjab at Govt. College of Technology Multan Selection was through Punjab Public Service Commission in BPS 17 with special pay
Mar 1992 - Oct 1992	Trainee Engineer. Dh Chemicals Ltd. (Urea Fertilizer Plant), Sheikhpura Training on operation of Natural Gas Treatment for Sulphur removal, Primary and Secondary Reformer, Absorption and Stripping sections, Ammonia Synthesis Section and Refrigeration Section

References

- Professor Dr. Z. H. Rizvi, Institute of Chemical Engg. & Tech. University of the Punjab
- Professor Dr.-Ing. R. Reimert, Engler-Bunte-Institut, University of Karlsruhe, Germany
- Professor Dr. O. Deutschmann, Institute of Chemical Technology, University of Karlsruhe, Germany

EXPERIENCE

(a) TEACHING THEORETICAL SUBJECTS

Advanced Reaction Engg.	M.Sc. Chemical Engg.
Fuels and Combustion	B.Sc. Chemical Engg .
Thermodynamics	B.Tech./B.Sc. Chemical Engg.
Heat and Mass Transfer	B.Sc. Chemical Engg.
Mass Transfer Operations	B.Sc. Chemical Engg.
Industrial Management	B.Sc. Chemical Engg.

(b) PRACTICALS

Incharge Unit Operations Laboratory

Incharge Fuels & Combustion Laboratory

Incharge Instrumentation & Process Control Laboratory

(c) ADMINISTRATIVE DUTIES

- Chairman Scholarship Committee, Institute of Chemical Engineering & Technology, University of the Punjab.
- Student Advisor Institute of Chemical Engg. & Tech. University of the Punjab
- Accompanied industrial tours of different classes of the Institute of Chemical Engg. & Tech., Punjab University, across the country
- Conducting and monitoring of various examinations of B.Sc. Engg. Punjab University
- External Examiner University of Engineering & Technology Lahore/ Punjab Board of Technical Education
- Member committees for the development/revision of syllabi and courses for B.Sc. Chemical Engineering & M.Sc. , PhD Engineering
- Incharge student's extra curricular activities
- Member administration committee for prospectus preparation / students admissions
- Assistant Superintendent Boys Hostel , Punjab University,
- Lahore

(d) Research Projects

- i) Desalination of Water using Solar Energy
- ii) Vacuum gas carburizing with propane and acetylene under the supervision of Professor Rainer Reimert & Professor O. Deutschmann during PhD studies at University of Karlsruhe, Germany
- iii) Desulphurization of jet fuel using membrane under the supervision of Professor Reimert, University of Karlsruhe, Germany
- iv) Reduction of indigenous barites for the manufacture of barium chemicals under the supervision of Professor Z. U. Sheikh, Institute of Chemical Engg. & Tech. Punjab University Lahore

(e) Book Publication:

Title : Vacuum Gas Carburizing – Fate of Hydrocarbons
ISBN: 978-3-86644-275-7
Publisher: Universitatverlag Karlsruhe, Germany
Year: 2008

(f) PhD THESIS SUPERVISION:

Supervising a PhD Thesis on CFD modelling of coal combustion in a CFB combustor

(g) Selected List of Process/ Plant Design Projects Supervised

- Hydro desulphurization of Gas Oil
- De-Oiling of wax
- Production of Ethanol from Molasses
- Detection and Removal of Heavy Metals from Drinking Water
- Industrial Waste Water Characterization
- Design of Urea Prilling Tower
- Design of Urea Evaporator
- A plant design report on Hydrodesulphurization of diesel oil
- A plant design report on production of green diesel from vegetable oil

Publications:

1. Mahmood Saleem, Rafi Ullah Khan, M. Suleman Tahir, Gernot Krammer, Experimental study of cake formation on heat treated and membrane coated needle felts in a pilot scale pulse jet. *Powder Technology*, 2011, 214(3), 389-399
2. Shehzad Younas Khawaja, Muhammad Rashid Usman, Sharooz Khan, Waheed Afzal, Muhammad Sarfraz Akram, Rafi Ullah Khan, Niaz Ahmad Akhtar. On the Factors Influencing the Hydrodynamic Performance of a Pulsed Sieve-Plate

Extraction Column: Dispersed Phase Holdup. *Journal Of Faculty Of Engineering & Technology, Vol 18, No 1 (2011)*

3. Javed A. Awan, Rafi Ullah Khan, Muhammad Rashid Usman, Dominique Richon. Electrical Conductivity of n-Propylmercaptan (n-PM) in Methyldiethanolamine (MDEA) Aqueous Solutions at 303 K. *Journal of the Pakistan Institute of Chemical Engineers, Vol 39, No 1 (2011)*
4. Kanwar Saleem Akhtar, Aamir Ijaz, Rafi Ullah Khana Cfd Modeling of Coal Combustion for Higher Energy Efficiency and Lower Environmental Impact . *In the proceeding of 4th Symposium on Engineering Sciences, PU Lahore March 1, 2011*
5. S. Y. Khawaja, S. Khan, M. R. Usman, W. Afzal, R.U. Khan, and N.A. Akhtar. On the Factors Influencing the Performance of a Pulsed Sieve-Plate Extraction Columns: Holdup and Drop Size Distribution. *In the Proceedings of 4th Symposium on Engineering Sciences, PU Lahore March 1, 2011*
6. Waheed Afzal, Shehzad Younas Khawaja, Sharooz Khan, Muhammad Rashid Usman, Rafi Ullah Khan and Niaz Ahmad Akhtar . Treatment of Wastewater Containing Aromatic Compounds Using a Pulsed-Sieve-Plate Extraction Column. *In the proceedings of AIChE annual meeting Nov. 7-12, 2010, Salt Lake City, USA*
7. R. U. Khan et al. Vacuum Gas Carburizing - Effect of Acetone On Pyrolysis of Acetylene. . *In the proceedings of AIChE annual meeting Nov. 7-12, 2010, Salt Lake City, USA*
8. Dominic Buchholz, Rafi Ullah Khan, Siegfried Bajohr, and Rainer Reimert CFD Modeling of Acetylene Pyrolysis for Vacuum Carburizing of Steel. *Industrial and Engineering. Chemistry Research. 49(3), 1130-1137, 2010 .*
9. D. Buchholz, R. U. Khan, S. Bajohr, F. Graf, R. Reimert.. Simulation des Niederdruckaufkohlens von Stahl mit Ethin. *Chemie Ingenieur Technik-CIT, Wiley-InterScience Journal (Germany) 2009, 81(8) 1095-1096*
10. R. U. Khan, M. Saleem, A. Shafeeq. Vacuum Gas Carburizing with Acetylene - Gas Phase Modeling of a Bench Scale Reactor. *J. Pakistan Institute of Chemical Engineers (JPICChE), Vol. XXXVII, 2009,*
11. M. N. Younis, M. S. Saeed, S. Khan, M. U. Furqan , R.U. Khan & M. Saleem. Production and Characterization of Biodiesel from Waste and Vegetable Oils. *Journal of Quality and Technology Management, 2009 , vol. 5(1), pp. 111-121*
12. U. Irshad, M. N. Sharif, R.U.Khan & Z.H. Rizvi. Granulation of Urea in a Pan Granulator. *Journal of Quality and Technology Management, , 2009 vol. 5(1), pp. 56-66*

13. A.Shafeeq, A.Muhammad, R.U.Khan and M.Azam. Application of heuristics to solve scheduling problems of intermediate transfer policies in multiproduct chemical batch processes. *Journal of Quality and Technology Management*, 2009 vol. 5(1), pp. 67-81
14. Khan, Rafi U.; Buchholz, Dominic; Graf, Frank; and Reimert, Rainer. Pyrolysis of Acetylene for Vacuum Carburizing of Steel: Modeling with Detailed Kinetics," *International Journal of Chemical Reactor Engineering* (2009) Vol. 7: A10. available Online at: <http://www.bepress.com/ijcre/vol7/A10>
15. D. Buchholz, R.U. Khan, S. Bajohr, F. Graf, R. Reimert. Simulation des Niederdruckaufkohlens von Stahl mit Ethin, *ProcessNet Jahrestagung*, September 8-10, 2009 · Mannheim, Germany
16. Buchholz D., Khan R. U., Bajohr S., Graf F., Reimert R. CFD Modelling of Acetylene Pyrolysis for Vacuum Carburizing of Steel. *World Congress of Chemical Engineering (WCCE8)*, August 23—27, 2009, Montréal, Québec, Canada, ISBN 0-920804-44-6.
17. D. Buchholz, R. U. Khan, F. Graf, S. Bajohr, R. Reimert . Simulation of pyrolysis- and surface reactions of acetylene at low pressure carburizing conditions of steel. *Härterei-Technische Mitteilungen (Germany)* 2008, 63(2), 75-83 (<http://www.htm-journal.de>)
18. R. U. Khan, et al. Pyrolysis of propane for vacuum carburizing: An experimental and modeling study. *Journal of Analytical and Applied Pyrolysis*, 81(2), 148 -156, 2008
19. D. Buchholz, R.U. Khan, F. Graf, S. Bajohr, R. Reimert . Prozesssimulation des Niederdruckaufkohlens von Stahl mit Ethin, *ProcessNet Jahrestreffen (PAAT)*, November 24-25, 2008, Bad Honnef, Germany
20. Buchholz, D.; **Khan, R. U.**; Graf, F.; Bajohr, S.; Reimert, R. CFD modelling of acetylene pyrolysis for low pressure carburizing of steel. *18th International Congress of Chemical and Process Engineering, CHISA*, August 24.-28, 2008, Prague, Czech Republic
21. D. Buchholz, R.U. Khan, S. Bajohr, F. Graf, R. Reimert .CFD modelling of acetylene pyrolysis and surface reactions for low pressure carburizing of steel, *European Conference on Heat Treatment 2008*, May 7-9, 2008, Verona, Italy. ISBN 88-85298-64-8

22. D. Buchholz, R. U. Khan, F. Graf, S. Bajohr, R. Reimert. Modelling of the acetylene pyrolysis under the conditions of the low pressure carburization of steel. *Härterei-Technische Mitteilungen (Germany)*, 2007, 62(1), 5-12 (<http://www.htm-journal.de>)
23. R.U. Khan, S. Bajohr, F. Graf, R. Reimert. Modeling of acetylene pyrolysis under steel vacuum carburizing conditions in a tubular flow reactor. *Molecules*, 2007, 12, 290-296
24. Khan, R. U., Buchholz, D., Graf, F. Bajohr, S. and Reimert, R. Cfd Modeling of Acetylene Pyrolysis for Low Pressure Carburizing of Steel. *In the proceedings of AIChE annual meeting. November 4 -9, 2007, Salt Lake City, Utah, USA, ISBN 978-08169-1022-9*
25. D. Buchholz, R. U. Khan, F. Graf, S. Bajohr, R. Reimert. Simulation der Pyrolyse- und der Oberflächenreaktionen von Ethin beim Niederdruckaufkohlen von Stahl. *63. Härterei Kolloquium, October 10-12, 2007, Wiesbaden, Germany*
26. D. Buchholz, **R. U. Khan**, F. Graf, S. Bajohr, R. Reimert . Modelling of acetylene pyrolysis under the conditions of vacuum steel carburisation .*The 2nd Bodycote/AGA in-depth Surface Engineering Seminar. May 22-23, 2007, Stenungsund, Sweden*
27. Modeling of acetylene pyrolysis under vacuum carburizing conditions of steel in a tubular flow reactor” International Electronic *Conference on Synthetic Organic Chemistry ECSOC-10, November 2006, <http://www.mdpi.org/ecsoc>. Basel, Switzerland, ISBN 3-906980-18-9*
28. M. Saleem, R.U. Khan, N.A. Akhtar, Z.U. Sheikh. Recovery of Barium from Indigenous Barites. *Journal Pakistan Institute of Chemical Engineers (JPICHE)* , No.1-2. Vol. XXIII, 1995, pp 109-111