

Curriculum Vitae

Prof. Dr. Irfan Ahmed Shaikh

PhD. Earth & Environmental Sciences

email: Irfan.cees@pu.edu.pk

Professor College of Earth & Environmental Science,
University of the Punjab, Lahore, Pakistan

Subjects taught: Wastewater Treatments (Theory and Practical); Water Pollution and Remediation (Theory and Practical); Wastewater Treatments for Textile Industry; Environmental Engineering Yarn (Theory and Practical); research activities in Wastewater Treatments and Environmental issues of textile industry

Responsibilities: Served as coordinator of BS/MSc Environmental Science Program for both Morning & Evening Classes; member of Board of Studies (BOS); member of the Departmental Doctoral Program Committee (DPC), developed several new BS and MS level new courses; supervised thesis groups for under graduate and graduate students

► **March 2003– August 2009 [Teaching and Research Experience]**

Assistant Professor University of Management & Technology (UMT),
Lahore, Pakistan

Subjects taught: Environmental aspects of Textiles (Theory and Practical); Textile Dyeing & Finishing (Theory and Practical); Yarn manufacturing (Theory and Practical); Textile Chemistry; research activities in textile related environmental issues

Responsibilities: Chairman & Departmental head; student advisor; developed several new programs and BS and MS level new courses; supervised thesis groups for under graduate and graduate students

► **September 1997 – March 2003 [Industrial Experience]**

Deputy Manager, Research & Development (R&D)

Sapphire Fibres Ltd. Dyeing Unit, Raiwind, Lahore, Pakistan

Responsibilities: Monitoring and control of textile wastewater treatment plant; water and chemical optimization in the textile dyeing process; setting out the processing priorities and routes; managing the technical and production matters of concerned departments; bulk process development and cost reduction of dyes and chemical auxiliaries; Troubleshooting in production related to substrates, dyes, and processing; Testing of surgical cotton to meet stringent specification and quality parameters; Dyes formulation, Costing, and colour matching operation using both visual and computer aided equipment like spectrophotometer (DATA COLOR) and associated recipe production system; Laboratory supervision, testing and QC of dyes, chemicals, and finished products using AATCC & SDC test methods; responsible to issue “Certificate of Conformity” for finished products

EDUCATIONAL QUALIFICATIONS

- | | |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2010 | <i>University of the Punjab, Lahore, Pakistan</i>
Ph.D. in Earth and Environmental Sciences
Dissertation Title: “Development of AOPs based Novel Technology for Water Conservation and Pollution Reduction in Textile Dyeing” |
| 1997 | <i>University of Leeds, United Kingdom (UK)</i>
MSc. in Textile Dyeing & Finishing
Dissertation Title: “An Investigation to Provide Guidelines for Pollution Prevention in the Pakistan Dyeing industry by reviewing Dyehouse Pollution and related Environmental issues in the Western World.” |
| 1995 | <i>Southern Polytechnic University, Georgia, USA</i>
BS. in Textile Engineering Technology
Dissertation Title: “Design of a ring spinning mill” |

PATENTS

Seven (7) international patents had been filed by German Organization (Thies GmbH & Co. KG) on a novel research work of my PhD, which reduced pollution load and water consumption in textile dyeing process: *Method and Device for Dyeing a Textile Substrate:*

1. **USA Patent**, Patent No. US 2009/0126124
2. **European Patent**, Patent No. EP1990456
3. **International Patent**, Patent No. WO2008138282
4. **Korean Patent**, Patent No. KR20080099824
5. **Japanese Patent**, Patent No. JP2008280666
6. **German Patent**, Patent No. DE102007022265
7. **Chinese Patent**, Patent No. CN101302722

FIELDS OF MAJOR SCIENTIFIC RESEARCH INTEREST

- Industrial Wastewater Treatments
- Water Pollution and control
- Environmental issues related to textile sector
- Reduction of fresh water consumption in textile dyeing processes
- Recycling & reuse of AOP treated textile effluents

PUBLICATIONS of DR. IRFAN AHMED SHAIKH

1. Published Papers in HEC Recognized National Journals and International Impact Factor Journals

Sr. No.	Title of Paper	Name of Publishing Journal / ISSN #	Year	Vol. (issue)	Pages	HEC Recognized/ Category	Impact Factor
1	Performance assessment of alum as coagulant for degradation of disperse dyes from aqueous medium	International Journal of Environmental Analytical Chemistry	2020	10.1080/03067319.2020.1806254		W	1.43
2	Application of Ozone in Stripping of Cotton Fabric Dyed with Reactive Dyes	Ozone: Science & Engineering ISSN: 0191-951	2019	42 (4)	319-330	W	2.082
3	A new approach for the removal of unfixed dyes from reactive dyed cotton by Fenton oxidation	Journal of Water Reuse and Desalination ISSN: 2220-1319	2019	9(2)	133-141	W	1.538
4	Development of a high efficiency rice husk based adsorbent for removal of dyes from wastewater: application to Everzol Black GR and Reactive Orange 113	Desalination and Water Treatment ISSN: 1944-3994	2018	135	279-289	W	1.234
5	Effects of Different Parameters on Photocatalytic Oxidation of Slaughterhouse Wastewater Using TiO ₂ and Silver-Doped	Polish Journal of Environmental Studies ISSN: 1230-1485	2019	28(3)	1591-1600	W	0.793

	TiO ₂ Nanoparticles						
6	Detection of heavy metals in River Harrow at Kharala Khyber Pakhtunkhwa, Pakistan	Journal of Biodiversity and Environmental Sciences	2018	13 (1)	175-179	X	
7	Performance Evaluation of Selected Coagulants for the Removal and Reuse of Textile Wastewater Containing C.I. Reactive Black 5	AATCC Journal of Research ISSN: 2330-5517	2018	5(5)	9-14	W	0.364
8	Decolorization of Reactive Azo Dye Remazol Black B by Using Advanced Oxidation Processes (AOPs)	Journal of The Chemical Society Of Pakistan ISSN: 0253-5106	2018	40(5)	828-833	W	0.280
9	Detection of heavy metals in River Harrow at Kharala Khyber Pakhtunkhwa, Pakistan	Journal of Biodiversity and Environmental Sciences ISSN: 2220-6663	2018	13(1)	175-179	X	
10	Dyeing and characterization of regenerated cellulose nanofibers with vat dyes	Carbohydrate Polymers ISSN: 0144-8617	2017	174	443–449	W	5.158
11	Environment Friendly Approach to Simultaneously Remove Unfixed Dyes from Textile Fabric and Wash-off Liquor	FIBRES & TEXTILES in Eastern Europe ISSN: 230-3666	2016	3(117)	124-129	W	0.626
12	Photocatalytic degradation of synthetic textile Effluent by Modified Sol -Gel synthesized mobilized and Immobilized TiO ₂ and Ag doped TiO ₂	Polish Journal of Environmental Studies ISSN: 1230-1485	2016	25(4)	1391-1402	W	0.793
13	Application of ozone in cotton bleaching with multiple reuse of a	Textile Research Journal	2014	84(5)	527-538	W	1.599

	water bath	ISSN: 0040-5175					
14	End of life scenarios for Municipal Solid Waste of Defence Housing Authority Lahore, Pakistan	Polish Journal of Environmental Studies ISSN: 1230-1485	2017	26(3)	961-968	W	1.120
15	Human health risk assessment, congener specific analysis and spatial distribution pattern of organochlorine pesticides (OCPs) through rice crop from selected districts of Punjab Province, Pakistan	Science of the Total Environment ISSN: 0048-9697	2015	511	354-361	W	3.976
16	Assessment of Mercury Contamination in Water and Soil Surrounding a Chlor-Alkali Plant: A Case Study	Journal of The Chemical Society Of Pakistan ISSN: 0253-5106	2015	37(1)	173-178	W	0.612
17	Pilot-scale Study: Hydrolyzed Reactive Dye Removal Using Direct Ozone Injection in Jet Dyeing Machine	AATCC Review ISSN: 1532-8813	2013	13(4)	41-46	W	0.254
18	Improved Deep Shade Reactive Dyeing Colorfastness Using Ozone During Wash-off	AATCC Review ISSN: 1532-8813	2010	10(6)	73-77	W	0.315
19	Modeling Greenhouse Gases Emissions from MSW of Lahore	Technical Journal ISSN: 1813-1786	2015	20 (1)	50-53	Y	-
20	Accumulation of Heavy Metals in Edible Organs of Different Meat Product Available in the Markets of Lahore, Pakistan	Pakistan Journal of Scientific and Industrial Research Series B: Biological Sciences ISSN: 2221-6413	2015	58(2)	92-97	X	-
21	Adsorption of Acid Yellow-73 and Direct Violet-51 Dyes from Textile Wastewater by using Iron Doped Corncob Charcoal	Pakistan Journal of Analytical and Environmental Chemistry	2015	16(1)	31-38	Y	-

		ISSN: 1996-918X					
22	A Novel Approach for the Reuse of the Textile Bleaching Wastewater	Technical Journal ISSN: 1813-1786	2015	20(1)	18-25	Y	-
23	Fenton Oxidation Treatment of Spent Wash-Off Liquor for Reuse in Reactive Dyeing	Technical Journal ISSN: 1813-1786	2014	19(4)	43-47	Y	-
24	An Investigation to Adopt Zero Liquid Discharge Textile Dyeing Using AOPS	Mehran University Research Journal of Engineering & Technology ISSN: 0254-7821	2015	34(2)	196-201	X	-
25	Isolation and its Purification of Laccase Acid Dye from Stick Lac and study of its (Colour Fastness) Properties and Reflectance on Silk Fabric Dyed with Heavy Metal Mordants	Technical Journal ISSN: 1813-1786	2014	19(1)	6-11	Y	-
26	Characterization of Rotor Spun Knitting Yarn at High Rotor Speeds	Technical Journal ISSN: 1813-1786	2014	19(4)	73-78	Y	-
27	An Eco-friendly Approach for Sodium Chloride Free Cotton Dyeing	Technical Journal ISSN: 1813-1786	2014	19(3)	13-17	Y	-
28	An Attempt to Improve Wash Fastness of Red Dyes using Real Textile Wastewater	Pakistan Journal of Science ISSN: 0030-9877	2014	66(4)	368-372	Y	-
29	In-situ Decolorization of Residual Dye Effluent in Textile Jet Dyeing Machine by Ozone	Pakistan Journal of Analytical and Environmental Chemistry ISSN: 1996-918X	2014	15(2)	71-76	Y	-

30	Reuse of Beverage Industry Wastewater in Textile Dyeing after its Treatment with Ozone	Pakistan Journal of Nutrition ISSN: 1680-5194	2014	13(11)	653-656	Y	-
31	Eco-Friendly Approach to Remove COD, TSS and Colour from the Effluent Originating from the Pharmaceutical Industry	Pakistan Journal of Nutrition ISSN: 1680-5194	2015	14(3)	146-149	Y	-
32	Design and Development of Environment Friendly Textile Dyeing Machine	Technical Journal ISSN: 1813-1786	2014	19(3)	45-49	Y	-
33	Developments in Health Care and Medical Textiles - A Mini Review-1	Pakistan Journal of Nutrition ISSN: 1680-5194	2014	13(12)	780-783	Y	-
34	Recycling of Washing and Rinsing Textile Waste Water in Cotton Dyeing following an O ₃ Treatment	Pakistan Journal of Science ISSN: 0030-9877	2014	66(4)	373-376	Y	-
35	Advanced Oxidative Removal of C.I. Food Red 17 Dye from an Aqueous Solution	Pakistan Journal of Nutrition ISSN: 1680-5194	2014	13(11)	631-634	Y	-
36	Detection of heavy metals in River Harrow at Kharala Khyber Pakhtunkhwa, Pakistan	Journal of Biodiversity and Environmental Sciences ISSN: 2220-6663	2018	13 (1)	175-179	Y	-
37	Characterization and optimization of Photocatalytic activity of Sol Gel Synthesized TiO ₂ and Ag doped TiO ₂ through degradation	Polish Journal of Environmental Studies ISSN: 1230-1485	ACCEPTED PAPER			W	1.120

	of Synthetic textile effluent by UV lamp assisted experimental setup				
38	Effect of Different Parameters on Photocatalytic Oxidation of Slaughterhouse Wastewater by Using TiO ₂ and Silver Doped TiO ₂ nanoparticles	Polish Journal of Environmental Studies ISSN: 1230-1485	ACCEPTED PAPER	W	1.120
39	A new approach for the removal of unfixed dyes from reactive dyed cotton by Fenton oxidation	Journal of Water Reuse and Desalination ISSN: 2220-1319	ACCEPTED PAPER	W	0.688
40	Reuse of textile wastewater after treating with combined process of chemical coagulation and electrocoagulation	Polish Journal of Environmental Studies ISSN: 1230-1485	ACCEPTED PAPER	W	1.120

2. Published Papers in Other National and International Journals

Sr. No.	Title of Paper	Name of Publishing Journal / ISSN #	Year	Vol. (issue)	Pages	HEC Recognized/ Category	Impact Factor
41	Removal of Hydrolyzed Reactive Dyes from Cotton Fabric Using Spent H ₂ O ₂ -A Green Approach	Asian Journal of Chemistry ISSN: 0970-7077	2015	27(6)	2129-2132	-	-
42	A Pilot-Scale Application of O ₃ in Machine Cleaning to Replace Na ₂ S ₂ O ₄	Asian Journal of Chemistry ISSN: 0970-7077	2015	27(6)	2171-2174	-	-
43	Isolation and Management of Drinking Water Mycoflora by Ozone Treatment	Mycopath ISSN: 0970-7077	2012	10(1)	25-30	-	-

4. Published Papers in Proceedings

Sr. No.	Title of Paper	Name of Publishing Journal / ISSN #	Year	Vol. (issue)	Pages	HEC Recognized/ Category	Impact Factor
44	An Eco-Friendly Approach- Ozone Based Treatment of Wastewater for Multiple Reuse	Proceedings of the 2nd Environment and Natural Resources International Conference (ENRIC 2016): Interdisciplinary Approaches to Save Future Earth Environment 16 – 17 November, Ayutthaya, Thailand	2016		26	-	-
45	A Pilot-scale Study to Reduce Water Consumption in Cotton Dyeing Using Ozone- A Green Approach	Proceedings of Phuket International Conference ISSN: 2203-9449	2014		1-8	-	-
46	Need of R&D: Post W.T.O. Scenario	Processing of Research & Development Needs in Textile processing Industries, Institute of Chemical Engineering, University of the Punjab	2006		55-61	-	-

Technical Handbooks

1. **Pocket Wastewater Treatment Expert** (*in Press*). Published by College of Earth & Environmental Sciences, University of the Punjab, Lahore, Pakistan, 2015.
2. **Pocket Water Pollution Expert** (*in Press*). Published by College of Earth & Environmental Sciences, University of the Punjab, Lahore, Pakistan, 2015.
3. **Pocket Dyeing Printing Finishing Expert**, ISBN # 978-1604050059, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
4. **Pocket Textile Color Matching Expert**, ISBN # 978-1604050066, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2008.
5. **Pocket Textile Testing & Quality Expert**, ISBN # 978-1604050080, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2008.

6. **Pocket Spinning Expert**, ISBN # 978-1604050028, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
7. **Pocket Fibers Expert**, ISBN # 978-1604050011, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
8. **Pocket Q&A Expert**, ISBN # 978-1604050073, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
9. **Pocket Weaving Expert**, ISBN # 978-1604050035, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
10. **Pocket Knitting Expert**, ISBN # 978-1604050042, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2008.
11. **Pocket Apparel Expert**, ISBN # 978-1604050097, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2007.
12. **Pocket Textile Merchandising & Marketing Expert**, ISBN # 978-1604050103, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2008.
13. **Pocket Textile Expert**, ISBN # 978-1604050004, Published by Textile Info Society, University of Management & Technology (UMT), Lahore, Pakistan, 2002.

NATIONAL AND INTERNATIONAL CONFERENCES, SEMINARS, WORKSHOPS

1. 2nd International Conference on Emerging Trends in Earth and Environmental Sciences ETEES-2020, 5-8 March 5, 2020, CEES, Punjab University, Lahore
2. International Conference on Sustainable Environmental Technologies 2018 (ICSET 2018), 19-21 Aug 2018, Mapua University in Intramuros Campus, Manila Philippines
3. Workshop on Guidelines on Textile Processing Wastewater Treatment in Pakistan” GIZ Pakistan, Lahore, 10th – 12th April 2018, Lahore
4. Two day workshop on “Countering Violent Extremism Orientation” on 12-13 Sept-2017, organized by CHANGE and University of the Punjab, Lahore
5. The 2nd Environment and Natural Resources International Conference (ENRIC 2016): Interdisciplinary Approaches to Save Future Earth Environment, 16 – 17 November, 2016, Phra Nakhon Si Ayutthaya Province, Thailand
6. Celebration of World Quality Day on 5th April 2016, Director Quality Enhancement Cell, PU
7. World Water Day, 22 March 2016, College of Earth & Environmental Sciences (CEES) celebrated Punjab University.

8. Environment Day, 06 June 2016, College of Earth & Environmental Sciences (CEES), Punjab University.
9. Plastic Bags Menace, Alternatives and Social Responsiveness: A Case Study of Lahore, Punjab, 26-December-2016, Punjab Economic Research Institute Planning and Development Department, Government of the Punjab.
10. Focal Person nomination, National Enrolment Drive in the Country, 9-June-2016
11. *International Conference on Water Resource and Environment (WRE2015)* Beijing, China, 25-28 Jul-2015
12. *International workshop on “First Joint Forum Pakistan-Belarus Young Scientists”*, Minsk, Belarus, 5-7 October, 2015
13. *International Conference on Energy, Environment and Sustainable Economy*, Australian Society for Commerce Industry and Engineering, Patong Beach, Kathu, Phuket, Thailand, 7-8 December 2014
14. Annual Water Symposium and Launch ceremony of AWS water management standards being hosted by WWF-Pakistan, Lahore, Pakistan, 27th October 2015
15. National training workshop on “Water Efficiency in the Textile Industry” organized by The German Ministry for Economic Cooperation and Development (BMZ) commissioned to GIZ to implement the project, Faisalabad, 1-3 December, 2015.
16. Advanced Approaches to save Water consumption in Textile Dyeing , Pakistan Hosiery Manufacturers & Exporters Association (PHMA) in collaboration with Pakistan Textile Research Council (PTRC), Lahore, 27 October, 2015
17. *National Workshop on Water & Wastewater Treatment & Design*, Ambassador Hotel, Lahore, 20-June-2014
18. *One Way: Innovations to Ecology*, Clariant Pakistan, PC Hotel, Lahore, 15 March, 2013
19. *Earth Rights-Educating Industry on Environmental Issues*, Lahore Chamber of Commerce and Industry (LCCI), Lahore, 16 May 2012
20. *Invention to Innovation Summit 2012*, Institute of Research Promotion (IRP) Lahore, 18 June 2012
21. *1st International Conference on Textile and Clothing (ICTC 2008)*, organized by Textile Institute, Pakistan, 4-5 November 2008
22. *2nd International Conference on Textile and Clothing (ICTC 2009)*, Technical Textile Conference, organized by Textile Institute, Pakistan, 7-8 May 2009
23. *Impact of Energy Crisis on Textile Exports*, Textile Productivity Center, UMT, Lahore, 20 June 2009

24. *Financial and Energy Crisis: Prospects for Textile and Garments Industry*, Textile Productivity Center, UMT, Lahore, 28 May 2009
25. *ITMA ASIA 2005*, the 2nd Asian International Exhibition of Textile Machinery, Singapore, 17-21 October 2005
26. *Singapore Fashion-Tech Solutions Conference*, organized by TAFTC (Textile & Fashion Industry Training Centre), Singapore, 1-3 November 2006
27. *Research & Development Needs in Textile processing Industries*, Institute of Chemical Engineering, University of the Punjab, 28 March 2006
28. *Garment Times*, Sri Lanka Exhibition & Convention Centre, Colombo, Sri Lanka, 17-19 February, 2006
29. *Era of Synthetic Colour*, SDC Lahore Region Annual Conference 2006, PC Hotel, Lahore, 18 June 2006
30. *Seminar on Textile Effluent Management*, University of Management & Technology, Lahore, Pakistan, 20 March 2008
31. *Challenges and Problems for Public Policy in Pakistan*, Department of Social Sciences, University of Management & Technology, March 12, 2008
32. *Weaving Advancement Research Seminar*, Dr. Kim Gandhi, Department of Textile Engineering, University of Management & Technology, 22 April 2008
33. *Trouble shooting in Textile Processing*, Pakistan Hosiery Manufacturers Association (PHMA), Lahore, 15- 16, August 2007
34. *Industrial Colour Physics*, Shafitexcel, Raiwind Industrial Area, Raiwind, 14 March, 2013
35. *The International Machinery Exhibition of Garment &Textile Technology*, Expo Centre, Lahore, 28 March 2013

LIST OF SELECTED M.PHIL THESIS SUPERVISED

- An attempt to reuse spent dye bath for reduced water and chemical consumption in textile dyeing process
- Decolorization of C.I. Reactive Blue 19 in textile wastewater by using saw dust
Evaluation of the performance of Magnesium Chloride for the removal of Turquoise Blue dye

- A study to remove color from textile effluent by using coagulant in wash-off process
Study of the performance of Magnesium, Calcium and Iron based coagulants for the removal of C.I. Black 5 dye from the industrial wastewater
- Optimization of Coagulation process for the treatment of effluent originating from the paint industry
- A study to re-use of textile wastewater after treating with sodium hydrosulfite, ozone, and coagulants
- A novel approach to wash-off hydrolyzed reactive dyes from cotton fabric using spent H₂O₂ bleach water
- A study to evaluate the role of Pre-Ozonation & Pre-Coagulation for wastewater treatment using AOP's
- Effectiveness of Fenton process for the removal of colour and COD from synthetic textile wastewater
- A strategy to reduce salt related water pollution in textile dyeing
- Decolorization of reactive dyes used in the textile industry through Ozonation
- Color removal from textile effluent through AOPs technique
- An attempt to reduce energy consumption in textile dyeing
- Identification and Treatment of funge in drinking water using Ozone
- Reuse of hard waste from a textile spinning mill
- Removal of dyes from textile effluents using Cynodow Dactylon (a grass)

OTHER DISTINCTIONS

- Signed a contract with German Company, Thies GmbH & Co. KG, for *commercialization of patented technology*, worth US\$0.50 million, 2009
- Best Paper Award in the *International Conference on Energy, Environment and Sustainable Economy*, Australian Society for Commerce Industry and Engineering, Patong Beach, Kathu, Phuket, Thailand, 7-8 December 2014
- *Development of Environmental Technology (3-Year) program*, Government of the Punjab, Technical Education & Vocational Training Authority (TEVTA), 2012
- *Development of new BS/MS/PhD programs*, Department of Textile Engineering, University of Management & Technology, Lahore, 2005
- *Provided consultancy services* to Singapore Textile Federation on FTA (Textile) for USA, 2007
- *My Books had been taught in FIDM* Los Angeles and San Francisco campuses, 2006-2010
- Studied in USA throughout scholarship *awarded by the host institution based on academic performance*, 1991-1995

- *Best debater awards* throughout the school and college life, 1985-1990
- Achieved prestigious UK certification called *Chartered Colourist*, based on professional education and experience in textile dyeing and related industries, 2002
- *Received several research grants (0.15 million each)* from University of the Punjab to conduct research on industrial wastewaters, 2011-2015
- *Conducted dozens of Training Sessions for industrial workers*, at PHMA (Pakistan Hosiery manufacturers Association), Sapphire Fibres, and ShafiTexcel, 2005-2014