CURRICULUM VITAE

Dr. ARUN KUMAR SINGH

Address: Correspondence
C/O Prof. Jayant K. Singh
NL-2, 202A, Department of Chemical Engineering,
Indian Institute of Technology, Kanpur
Kanpur- 208016 (U.P.)
India

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PRESENT POSITION

17/01/2017-Present

SERB-**National Post-Doctoral Fellow**
Chemical Engineering Department
Indian Institute of Technology, Kanpur
Kanpur- 208016, Uttar Pradesh.
Advisor: Prof. Jayant K. Singh
Research Area: Fabrication of durable nanostructured materials surfaces with special wettability and their applications.

EDUCATION

01/2011 – 04/2015

Ph. D. in Chemistry,
CSIR-Indian Institute of Toxicology Research, CSIR, Lucknow, India
(Academy of Scientific and Innovative Research. AcSIR),
Thesis: Synthesis, Characterization and application of zero-valent metallic nanoparticles in water decontamination.
Advisor: Dr. Kunwar P. Singh, Ex-Chief Scientist and **Head,** Environmental Chemistry Division**,**

07/2003 – 06/2005

1st Class M. Sc. in Chemistry (Organic Chemistry)
K.N.I.P.S.S. Sultanpur
(Affiliated to Dr. R.M.L. Avadh University Faizabad, Uttar Pradesh)

07/1999 – 06/2002

B**. Sc. Subject:** Chemistry, Botany
K.N.I.P.S.S. Sultanpur
(Affiliated to Dr. R.M.L. Avadh University Faizabad, Uttar Pradesh)

Research Experience:

03/2016 – 01/2017

Post-Doc (Project Scientist)
Chemical Engineering Department
Indian Institute of Technology, Kanpur, Uttar Pradesh
Advisor: Prof. Jayant K. Singh
Research Area: Wetting behaviour of fluids on nanostructured surfaces

04/2011 –04/2014 CSIR-Senior Research Fellow
Environmental Chemistry Division
CSIR-Indian Institute of Toxicology Research, Lucknow, U.P.

05/2008 –03/2011 Research Fellow
Environmental Chemistry Division
CSIR-Indian Institute of Toxicology Research, Lucknow, U.P.

Teaching Experience (02 Years and 03 months)

01/2006 –05/2008 Lecturer
Department of Chemistry
K. N. I. P. S. S. Sultanpur
(Affiliated to Dr. R. M. L. Avadh University Faizabad, Uttar Pradesh)
Taught Courses: Organic chemistry and Inorganic chemistry at U.G. (B. Sc.) level and Organic Chemistry at P. G. (M. Sc.) level.

Awards and Fellowships:

1. Science and Engineering Research Board- **National Post-Doctoral Fellowship**, 2017 at Indian Institute of Technology Kanpur, Uttar Pradesh.

2. **CSIR-Senior Research Fellowship** for Doctoral Research Studies at CSIR-Indian Institute of Toxicology Research Lucknow, (April 2011- March 2014)

RESEARCH AREA OF INTERESTS

- Fabrication of eco-friendly and durable **nanostructured material surfaces** with special wettability and their applications in self-cleaning, separation of oily-pollutant from water, anti-icing, anti-corrosion coatings.
- Fabrication of superhydrophobic/superoleophilic and superhydrophilic/superoleophobic surface on various materials for separation of oily and organic solvents from water via adsorption or filtration approach.
- Development of adsorbents/**nanoparticles**/**magnetic nano-composites** for water remediation.
- Application of zero-valent **metallic nanoparticles** in remediation of contaminated (metals, ions & organic contaminants) water.
- Water/wastewater monitoring and quality assessment.

RESEARCH PUBLICATIONS:

Total Number:	**17** + 3 (Under Review)
Citations Indices:	(https://scholar.google.co.in/citations?user=W16yRu0AAAAJ&hl=en)
Citations:	**724**, **h-index: 11**, **i10-index: 11**

From Post-doctoral Research Work- (IIT-Kanpur)

1. **Singh AK,** Singh JK, **An efficient use of waste PE for hydrophobic surface coatings and its application on cotton fibers for oil-water separator. "Progress in Organic Coatings, 2019**, 131, 301-310, **[Impact Factor: 2.936] [Impact Factor: 2.955]**

2. **Singh AK,** Singh JK, **Underwater superoleophobic biomaterial surface based on waste potato peels for simultaneous separation of oil/water mixtures and dye adsorption. "Cellulose" 2019, [Impact Factor: 3.809] Accepted.**

3. **Singh AK,** Singh JK**, Fabrication of durable super-repellent surfaces on cotton fabric with liquids of varying surface tension: Low surface energy and high roughness. Applied Surface Science, 2017, 416 639-648 [Impact Factor: 4.439] [Cited by: 13].**

4. **Singh AK,** Singh JK**, Fabrication of durable superhydrophobic coating on cotton fabrics with photocatalytic activity by fluorine-free chemical modification for dual-functional water purification. New Journal of Chemistry**, **2017**, 41, 4618-4628 **[Impact Factor: 3.201] [Cited by: 13].**

5. **Singh AK,** Ketan K, Singh JK, **Simple and green fabrication of recyclable magnetic highly hydrophobic sorbents derived from waste orange peels for removal of oil and organic solvents from water surface. Journal of Environmental Chemical Engineering, 2017, 5, 5250-5259 [Cited by: 3].**

6. **Singh AK,** Singh JK, **Fabrication of zirconia based durable superhydrophobic-superoleophilic fabrics using non fluorinated materials for oil-water separation and water purification. RSC Advances**, **2016**, 6, 103632-103640, **[Impact Factor: 2.936] [Cited by: 15].**

From Phd Research work (CSIR-IITR-Lucknow)

7. **Singh AK*,** Singh KP, **Optimization of phosphate removal from aqueous solution using activated carbon supported zero-valent iron nanoparticles: Application of RSM approach.** **Applied Water Science, Accepted, November 07, 2018. DOI:** https://doi.org/10.1007/s13201-018-0875-7.

8. **Singh AK*,** Singh KP, **Evaluation of phosphate removal capacity of Fe_3O_4-ZVINPs from aqueous solution: Optimization using response surface analysis**. **Research on Chemical Intermediate**, **2016**, Volume 42, Pages 7397-7415, **[Impact Factor: 1.674] [Cited by: 1].**

9. **Singh AK***, Singh KP. **Response surface optimization of nitrite removal from aqueous solution by Fe3O4 stabilized zero-valent iron nanoparticles using a three-factor, three-level Box-Behnken Design.** **Research on Chemical Intermediate**, **2015**, Volume 42, Pages 2247-2265, **[Impact Factor: 1.674] [Cited by: 4].**

10. Singh KP, Rai P, **Singh AK**, Verma P, Gupta S. **Occurance of pharmaceuticals in urban wastewater of north Indian cities and risk assesment.** **Environmental Monitoring and Assessment**, **2014**, 186, 6663-6682, **[Impact Factor: 1.804] [Cited by: 28].**

11. Singh KP, **Singh AK**, Gupta S. **Optimization of Nitrate Reduction by EDTA Catalyzed Zero-Valent Bimetallic Nanoparticles in Aqueous Medium.** **Environmental Science and Pollution Research**, 2012, Volume 19, Pages 3914-3924, **[Impact Factor: 2.800] [Cited by: 16].**

12. Singh KP, **Singh AK**, Gupta S, Rai P. **Modeling and Optimization of Reductive Degradation of Chloramphenicol in Aqueous Solution by Zero-Valent Bimetallic Nanoparticles.** **Environmental Science and Pollution Research**, 2012, Volume 19, Pages 2063-2078, **[Impact Factor: 2.800] [Cited by: 24].**

13. Singh KP, **Singh AK**, Singh UV, Verma P. **Optimizing removal of ibuprofen from water by magnetic nanocomposite using Box-Behken Design**. **Environmental Science and Pollution Research**, 2012, Volume 19, Pages 724-738, **[Impact Factor: 2.800]** **[Cited by: 21]**.

14. Singh KP, **Singh AK**, Gupta S, Sinha S. **Optimization of Cr(VI) reduction by zero-valent bimetallic nanoparticles using the response surface modeling approach**. **Desalination**, Volume 270, Issues 1–3, 1 April 2011, Pages 275-284, **[Impact Factor: 6.603]** **[Cited by: 113]**.

15. Malik A, Verma P, **Singh AK**, Singh KP. **Distribution of polycyclic aromatic hydrocarbons in water and bed sediments of the Gomti River, India**. **Environmental Monitoring and Assessment**, 2011, Volume 172, Numbers 1-4, Pages 529-545, **[Impact Factor: 1.804]** **[Cited by: 111]**.

16. Singh KP, Gupta S, **Singh AK**, Sinha S. **Optimizing adsorption of crystal violet dye from water by magnetic nanocomposite using response surface modeling approach**. **Journal of Hazardous Materials,** Volume 186, Issues 2–3, 2011, Pages 1462-1473, **[Impact Factor: 6.434]** **[Cited by: 266]**.

17. Singh KP, Gupta S, **Singh AK**, Sinha S. **Experimental design and response surface modeling for optimization of Rhodamine B removal from water by magnetic nanocomposite**. **Chemical Engineering Journal**, Volume 165, Issue 1, 2010, Pages 151-160, **[Impact Factor: 6.735]** **[Cited by: 80]**.

***Correspondence author and first author**

Reviewer of articles in the following SCI JOURNALS:

1. Journal of Environmental Chemical Engineering **(Elsevier)**
2. Journal of Soudi Chemical Society **(Elsevier)**
3. Chemical Engineering Communications **(Taylor & Francis)**
4. ACS Omega **(American Chemical Society)**
5. Ecotoxicology and Environmental Safety **(Elsevier)**
6. Separation Science and Technology **(Taylor & Francis)**

RESEARCH GRANTS:

Funding agency:	Science and Engineering Research Board/DST
Project Title:	Fabrication of eco-friendly and durable nano-structured materials surfaces with special wettability and its application in oil-water separation
Duration:	17 January 2017 – 16 January 2019 **(Completed)**
Budget amount:	Rs. 19.2 Lakh

ORAL PRESENTATION IN NATIONAL AND INTERNATIONAL CONFERENCES

- **Arun Kumar Singh,** Jayant K. Singh (2019) Oral Presentation entitled "Green, biodegradable, underwater superoleophobic waste potato peels layer for efficient gravity-directed oil/water separation and water-soluble dyes removal simultaneously" in the Indo-German joint scientific workshop on membranes for water and energy, 18th – 20th, February, 2019 at the CSIR-Central salt and marine chemicals research Institute Bhavanagar-364002, Gujarat, India.

- **Arun Kumar Singh,** Jayant K. Singh (2017) Oral Presentation entitled "Fabrication of dual-funtional nanostuructured coating on cotton fabric by fluroine-free chemical modification for simultaneous oil-water separation and visible light catalysis**"** in the International Conference on Nanomaterials & Nanotechnology, 01st – 03rd March, 2017 at the Vinoba Bhave Research Institute, Saidabad, Allahabad, India.

- **Arun Kumar Singh,** Kunwar P. Singh (2014) Oral Presentation entitled "Removal of bromate from aqueous solution using zero-valent iron nanoparticles with EDTA" in International Conference on Nanoscience & Nanotechnology "**Aligarh Nano IV International"**organized by Department of Applied Physics, Aligarh Muslim University, Aligarh, India during 8-10 March, 2014.

- **Arun Kumar Singh,** Kunwar P. Singh (2013) Oral Presentation entitled "**Response surface optimization of nitrite removal from aqueous solution by Fe3O4 stabilized Fe^0 nanoparticles using three-factors, three-levels Box-Behnken Design"** in International Conference on Nanoscience & Nanotechnology (ICNN-2013) held at School of Physical Sciences of Babasaheb Bhimrao Ambedker University, Vidya Vihar, Raebareli Road, Lucknow, India during 18-20 November, 2013.

- **Arun Kumar Singh,** Kunwar P. Singh (2012) Oral Presentation entitled "**Optimization of EDTA catalyzed reduction of Cr (VI) using zero-valent bimetallic (Fe/Cu) nanoparticles in aqueous solution**" in the 32nd Session of The Academy of Environmental Biology and National Seminar on "Emerging pollutants and Pathogens: Challenges and Risk Reduction" held at CSIR- IITR, Lucknow, India during 20-22 September, 2012.

WORKSHOPS ATTENDED

- Participated in **five-days** training GIAN course on **"Membrane separations for the desalination of water: Materials, processes, applications and transport theory"** at Indian Institute of Technology, Roorkee (Uttrakhand) during 29th - 02nd November 2018.
- Participated in **seven-days** QIP short term course on **"Fluorescence Spectroscopy and its Application"** at Indian Institute of Technology, Kanpur (Uttar Pradesh) during November 13th – 19th, 2017.
- Participated in **five-days** training Worksop on **"Nanocomposites for Energy Conversion and Storage Applications with Special Reference to Carbon"** at Indian Institute of Technology, Kanpur (Uttar Pradesh) during 02nd - 06th January 2017.
- Participated in **five-days** training Worksop on **"Statistical Analysis for Engineers (SAFE-2015)"** at Indian Institute of Technology, Kanpur (Uttar Pradesh) during 04th - 08th May 2015.
- Participated in **three-days** training Worksop on "**Water Treatment by Adsorption**" at department of Environmental Science, Dr. R.M.L. Avadh University, Faizabad (Uttar Pradesh) during 27th - 29th July 2013.

Exposure to Analytical Instruments

- High Pressure Liquid Chromatography (HPLC)
- U.V.-Visible Spectrophotometer
- Ion Liquid Chromatography (ILC)
- Flame Photometer
- Goniometer

References:

Referee-1:

Name: Dr. Kunwar P. Singh

Designation: Ex-Chief Scientist

Address: Environmental Chemistry Division,
CSIR-Indian Institute of Toxicology Research,
Vishvigyan Bhavan 31, Mahatma Gandhi Marg,
P. B. No. 80, Lucknow, 226 001, Uttar Pradesh.,

Institute: CSIR-Indian Institute Toxicology Research, Lucknow

Email: kpsingh_52@yahoo.com

Contact No.: +919450400200

Referee-2:

Name: Dr. Jayant Kumar Singh

Designation: Professor

Address: Chemical Engineering Department,
Indian Institute of Technology Kanpur,
Kanpur-208016

Institute: Indian Institute Technology, Kanpur-208016, Uttar Pradesh

Email: jayant.singh@gmail.com jayantks@iitk.ac.in

Contact No.: +919936265937

PERSONAL DETAILS

Full Name	: **Arun Kumar Singh**
Father's Name	: R. L. Singh
Mother's Name	: Amravati Singh
Nationality	: Indian
Date of Birth	: 16th August 1982
Language	: English, Hindi

DECLARATION

I hereby declare that all the information provided by me in this resume is true and best to my knowledge and I accept the responsibility for any misrepresentation.

Date: 05/03/2019

(Arun Kumar Singh)