Dr. Jacklin Jeke Nilling

PhD (IIT Kanpur)
Assistant Professor Grade-II, Department of Civil Engineering,
NIT Karnataka, Surathkal

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Education

Exam/ Degree	Institute	Subject		
PhD details (2015-2022)	IIT Kanpur	Environmental Engineering (Civil Engineering)	**Date of Thesis Submission:** 09/08/2021	**Date of Defense:** 03/02/2022
M. Tech. (2013-2015)	NERIST	Environmental Science and Engineering (Civil Engineering)		
B. Tech. (2009-2013)	NERIST	Civil Engineering		

Honors/ Awards

- Ph.D. Thesis nominated for the 'Outstanding Thesis Award' among the graduating students in the Department of Civil Engineering, **2022**.
- Received IIT Kanpur Institute grant for attending Goldschmidt 2019 held at Barcelona, Spain, **2019**.
- Received best poster presentation at in-house Symposium organized by Centre for Environmental Science and Engineering, IIT Kanpur, 20th Jan **2018**.
- Received best poster presentation at International Ground Water Conference (IGWC-2017) jointly organized by the National Institute of Hydrology Roorkee and Central Ground Water Board, India- 11th – 13th Dec **2017**.
- Received Gold Medal for securing 1st position in M. Tech. in Environmental Engineering under the Department of Civil Engineering, **2015**.
- Cleared GATE in **2013** and **2015**.
- Received MHRD, GOI fellowship for pursuing PhD (**2015-2020**).
- Received MHRD, GOI fellowship for pursuing M. Tech. (**2013-2015**).
- District topper in Secondary School Examination (SSE), CBSE board, **2007.**
- Awarded merit certificates for scoring highest in Mathematics and Science and Technology and second highest in Social Sciences in SSE, **2007**.

Broad Research Interests

- Solid Waste Management
- Groundwater contamination remediation
- Surface and subsurface contaminant transport modelling
- Biological and physico-chemical treatment of water and wastewater
- Waste to resource conversion

Research Experiences

Sl. No.	Name of the Employer	Designation of Post	Nature of Responsibilities	Period	Pay Scale (INR)

1	IIT Kanpur	Project Scientist	Data analysis	Nov 2022 to Jan 2023 (0 Y, 3 M)	35,200/- p.m.
2	IIT Kanpur	JRF	Data analysis	Feb 2022 to April 2022 (0 Y, 3 M)	31,000/- p.m.
3	IIT Kanpur	Sr. Student Research Associate	Development of a smartphone camera-based sensor for the detection and remediation of chromium pollution in water (IMPRINT NO. 6840)	Jan 2020 to March 2020 (0 Y, 3 M)	32,000/- p.m.
4	IIT Kanpur	Instrument Operator of ICP-MS	Instrumental operations and troubleshooting	Jan 2019 to July 2019 (0 Y, 5 M)	35,000/- p.m.
5	IIT Kanpur	Instrument Operator of ICP-MS	Instrumental operations and troubleshooting	July 2017 to Jan 2018 (0 Y, 6 M)	
6	IIT Kanpur	Instrument Operator of MP-AES	Instrumental operations and troubleshooting	Jan 2017 to May 2017 (0 Y, 5 M)	28,000/- p.m.

Teaching Experiences

Sl. No.	Institute	Designation	Responsibilities	Period	Pay Scale (INR)
1	NIT Surathkal	Assistant Professor (Grade-II)	Teaching, research and administrative work.	17th Oct 2023 continuing	Level 10
2	NIT Arunachal Pradesh	Guest Faculty	Teaching building planning, construction and materials; Design of steel structure-II	1st Sept 2023 – 15th Oct 2023 (0 Y, 1.5 M)	1500/- per hour
3	Tezpur University	Guest Faculty	Teaching Engineering Graphics	Mar 2023 to June 2023 (0 Y, 4 M)	1500/- per hour
4	NIT Arunachal Pradesh	Guest Faculty	Teaching building planning, construction and materials; surveying-I	Aug 2020 to Dec 2020 (0 Y, 4 M)	40,000/- p.m.
5	IIT Kanpur	Tutor	Teaching Engineering Graphics	July 2018 to Nov 2018 (0 Y, 5 M)	35,000/- p.m.
6	IIT Kanpur	Teaching Assistant	TA of courses, Solid and Hazardous Waste Management (CE763A) and Industrial Waste Management CE765B)	Jan 2018 to May 2018 (0 Y, 5 M)	28,000/- p.m.

List of Publications

(A) Journals

1. Nilling, J. J.; Singh, A. **(Under Review)**, "Possible precipitation and adsorption immobilization of groundwater arsenic under elevated dissolved iron: extent and kinetics." *Environmental Science and Technology Water*.
2. Nilling, J. J.; Verma, A.; Singh, A. **(2022)**, **"**Precipitation of arsenic-bearing solids as a secondary control on arsenic speciation in groundwater: evidence from field study and geochemical analysis". *Geochimica et Cosmochimica Acta;* https://doi.org/10.1016/j.gca.2022.07.017.
3. Verma, A.; Sharma, L. M.; Pahuja, G.; Nilling, J. J.; Kumar, A.; Singh, A. **(2021)**, "Modified Biosand Filter for Provisioning of Potable Water to Rural Households Affected by Chronic Arsenic Pollution in Groundwater." *Environmental Engineering Science;* https://doi.org/10.1089/ees.2020.0290.
4. Pokhrel, B.; Nilling, J. J.; Ete, T.; Bharti, A. **(2017)**, "Green synthesis of stable silver nanoparticles using *Euphorbia milii* extract and study of its antimicrobial activity against *Escherichia coli*". *International Journals of Chemical Studies* (ISSN P-ISSN: 2349-8528, E- ISSN: 2321-4902).
5. Nilling, J. J.; Deka, M.; Prasad, S.; Tungi, S.; Bharti, A. **(2013)**, "Performance Evaluation of Laboratory Scale RBC to treat Wastewater from Hostels." *The International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)*; Vol.3, Issue-4, p2319-8753.

(B) Conferences

1. Nilling, J. J.; Singh, A. **(2020)**, "Relative kinetics of precipitation and adsorption of arsenic(V) in systems with dissolved iron(II)", Goldschmidt-2020, Virtual. https://doi.org/10.46427/gold2020.1934.
2. Verma, A.; Pahuja, G.; Kumar, A.; Nilling, J. J.; Murugan, P. A.; Matheswaran, S.; Singh, A. **(2020)**, "Understanding the (Bio)geochemistry of an Arsenic-Contaminated Aquifer for Sustainable Remediation, Geoenvironment-2020. Proceedings, P-32-38.
3. Nilling, J. J.; Verma, A.; Singh, A. **(2019)**, "Potential solubility and sorption controls on arsenic in the presence of elevated dissolved iron", Goldschmidt-2019, Barcelona. Abstract 2445
4. Verma, A.; Nilling, J. J.; Singh, A. **(2019)**, "As(V) reduction to As(III) in the presence of chloride in ambient conditions", Goldschmidt-2019. Abstract 3497
5. Nilling, J. J.; Verma, A.; Singh, A. **(2017)**, "Geochemical analysis of arsenic speciation in groundwater", 7th International Ground Water Conference (IGWC), 2017.
6. Nilling, J. J.; Bhattacharya, M.; Singh, A. **(2016)**, "Speciation of arsenic in typical groundwater of India", National Symposium on Geogenic Contamination of Groundwater (GCG 2016).
7. Kumar, S.; Nilling, J. J.; Imchen, L. P.; Bhutia, L.; Pranav, P. K. **(2014),** "Estimation of Waste and its Energy Potential in Tea Estates of Assam" AMETI,NERIST, Nirjuli. Proceedings Volume-1, P-314.

Oral and poster presentation

A. International Conferences

1. Contributed a paper entitled "Relative kinetics of precipitation and adsorption of arsenic(V) in systems with dissolved iron(II)" at the **Goldschmidt2020**, virtually organized jointly by the European Association of Geochemistry and Geochemical Society on 21st – 26th June 2020.
2. Presented a paper entitled "Potential solubility and sorption controls on arsenic in the presence of elevated dissolved iron" at the **Goldschmidt2019**, Barcelona, jointly organized by the European Association of Geochemistry and Geochemical Society on 18th – 23rd August 2019.
3. Presented a poster entitled "Geochemical analysis of arsenic speciation in groundwater" at the **7th International Ground Water Conference (IGWC), 2017**, New Delhi, jointly organized by the National Institute of Hydrology Roorkee and Central Ground Water Board, India, on 11th – 13th December 2017.

B. National Conferences

1. Presented a paper at the **National Conference on Science for Society, Environment, and Sustainability organized (SSES-2022)** organized by CSIR-NEIST, Jorhat, Assam, on 24th –26th November 2022.
2. Presented a paper titled "Geochemical analysis of arsenic-contaminated groundwater of Baikunthpur (Uttar Pradesh), India" at the **National Environmental Conference–2019**, organized by Centre for Environmental Science and Engineering, IIT Bombay, on 31st Jan – 2nd Feb 2019.
3. Presented a poster entitled "Geochemical analysis of arsenic speciation in groundwater" at the **in-house Symposium-2018** organized by Centre for Environmental Science and Engineering, IIT Kanpur, on 20th Jan 2018.
4. Presented a poster entitled "Speciation of arsenic in typical groundwater of India" at **National Symposium on Geogenic Contamination of Groundwater (GCG 2016)** organized by Department of Regional Water Studies, TERI University, New Delhi.
5. Presented a paper entitled "Climate change in East Sikkim and its socio-economic impacts" in the **National conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014)** organized by the Department of Agricultural Engineering, North Eastern Regional Institute of Science and Technology (NERIST), Nirjuli on 7th – 9th November 2014.
6. Presented a paper entitled "**Performance evaluation of laboratory scale RBC to treat wastewater from hostels"** in the TEQIP sponsored National Conference on "Recent advances in Civil Engineering-**NCRACE 13**" held on 15th – 16th November 2013.

Other workshops, short-term courses, seminars, symposiums, and webinars attended

1. **Five-days short-term training programme** on "**Neoteric development in solid waste management**". Organized by the Department of Civil Engineering, NIT Arunachal Pradesh on 21st – 25th March **2022**.
2. **One-Day International Webinar** on "**Emerging Materials and Technology for Water Purification**" organized by the Department of Physics in Collaboration with IQAC, Jawaharlal Nehru College on 12th Aug **2020**.

3. **Short-term course** on "Moment Analysis for Contaminant Fate and Transport" under **Global Initiative for Academic Networks (GIAN)**, MHRD, organized by Department of Civil Engineering, IIT Kanpur on 20th – 24th March **2018**.
4. **In-house Symposum-2018**, organized by Centre for Environmental Science and Engineering, IIT Kanpur on 20th Jan **2018**.
5. Attended a **"Groundwater Modelling Workshop"** on iMOD held at ICAR-NASC Complex, New Delhi, jointly organized by National Institute of Hydrology Roorkee and Central Ground Water Board, India, on 11th – 13th December **2017**.
6. **National Workshop on Disaster Management (NWDM)**, jointly organized by Department of Civil Engineering and Center for Management Studies, NERIST, Nirjuli on 29th – 30th August, **2014**.
7. **Short-term course** on "**Appropriate Technology for Rural Development**" under TEQIP organized by Department of Mechanical Engineering, NERIST, Nirjuli on 25th – 29th August **2014**.
8. **3-Days Workshop on "AutoCAD"** conducted by CETPA Infotech Pvt. Ltd. Held on 25th – 27th October **2013**.

Technical skills

❖ **Geochemical application softwares**:

Geochemist's Workbench®; Visual Minteq; Mineql+

❖ **Solid phase characterization softwares:**

JADE, CASA-XPS, Gatan Microscopy Suit

❖ **Plotting software:**

OriginPro, MATLAB, Microsoft Excel, GraphPad

❖ **Advanced Instruments operated**

1. Inductively coupled plasma mass spectrometer (ICP-MS)
2. IC coupled ICPMS (IC-ICP-MS)
3. Ion chromatography (IC)
4. Microwave plasma absorption emission spectroscopy (MPAES)
5. PALS zeta potential, particle size and molecular weight analyzer
6. UV-Visible spectrophotometry
7. Glove box
8. Freeze drier

❖ **Solid phase characterization techniques used:**

XRD, FE-SEM/EDX, W-SEM/EDX, XPS, XRF, BET, Raman spectroscopy, FTIR, HR-TEM/SAED

Extracurricular Activities

- A member of IIT Kanpur campus waste management. We established drum composting as the most suitable method to treat biodegradable waste from the campus, **2016-2020**.
- A member of Unnat Bharat Abhiyan, IIT Kanpur, under which IIT Kanpur adopted five villages around the campus, and I assessed the water quality of these villages. **2016-2022**.
- A member of RuTAG, IIT Kanpur, under which we worked on developing a low-cost sand filter for rural populations. We could not finish the project due to the time constraints, **2017-2019**.
- A member of the Green Cell, IIT Kanpur.
- Sports in-charge, Students Union of NERIST, Nirjuli**, 2012**.
- Refreshment in-charge, Civil Engineering Association of NERIST, Nirjuli, **2011**

- Rendered service under the National Service Scheme with a very good performance grade during the year **2011-2012**.
- Donated blood to a charitable blood bank initiated by Rotary Club, Kanpur, **2017**.