

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile: 1-2 paragraphs (not exceeding 500 words)

Dr. Jyoti Sahu has earned his M.Tech.-PhD dual degree from Indian Institute of Technology, Bombay in Chemical Engineering with thermodynamics in electrochemistry in 2018. Prior to this, she has hold B.Tech.– Chemical Engineering from H.B.T.I. Kanpur, India. Following the completion of her Ph.D., she had done her postdoctoral from IIT Delhi, and IIT Kanpur.

Her Ph.D. work is focused on the thermodynamic analysis of electrolytic systems with both experimental and theoretical components. Her Ph.D. work has tremendous industrial applications such as in Food and pharmaceuticals, Hydrometallurgy, Corrosion engineering, Heat transfer (design of eutectics), Oceanography etc. Her Early postdoctoral work is focused on the interfacial rheology of biopolymers in the presence on electrolytes and surfactants. Later, she worked on the Interfacial behavior of oil-water-electrolyte systems on substrates in the presence of surfactants and nanoparticles in IIT Kanpur as National Postdoctoral Fellow. Based on her research work, she has numerous publications and monographs in various renowned journals. Apart from this, she has various international conference proceedings papers also as a first author.

Presently, Dr. Jyoti Sahu is working as an Assistant professor in the Department of Chemical Engineering in N.I.T. Tiruchirappalli, Tamil Nadu. As her research work has involved a significant experimental technique. To cite a few select ones they include: Isothermal Titration Calorimeter, Differential Scanning Calorimeter, Goniometer, Surface Tension Measurement (pendant drop, sessile drop, Wilhelmy Plate, Dynamic Surface Tension, etc.), Karl Fisher Titration, Chromatography (HPLC, HPTLC, GPC), Thermal Analysis (DCC, TGA, DTA), Langmuir-Blodgett, Vapor Pressure Osmometer, Cyclic Voltmeter/Potentiostats, Particle Size Analyzer/Zeta-sizer, Image Analysis.

Additionally, her theoretical research work has involved a variety of modeling and simulation software such as COMSOL Multiphysics, Material Studio 5.0, and Mathematica. She also has good programming skills using Fortran, MATLAB, C, and C++.

Recently, she has been awarded the “Best Young Woman Faculty Award 2021 - 2022” by Novel Research Academy. She has also been selected for InSc Young Researcher Award-2021.

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1. Name: Dr. Jyoti Sahu
2. Designation: Assistant Professor
3. Office Address: The Department of Chemical Engineering, N.I.T. Tiruchirappalli, Tamil Nadu-620015
4. Contact number: +91-8879439922
5. Email (Primary): jyoti@nitt.edu Email (Secondary): jyotisiitb@gmail.com
6. Field(s) of Specialization: Mathematical modeling; Thermodynamics; Electrochemistry

7. Employment Profile

Job Title	Employer	From	To
Assistant Professor	Department of Chemical Engineering, NIT Tiruchirappalli, Tamil Nadu	June 2020	Till Date
National Postdoctoral Fellow, SERB	Department of Chemical Engineering, IIT Kanpur, U.P.	Jan. 2020	May 2020
Project Scientist	Department of Chemical Engineering, IIT Kanpur, U.P.	May 2019	Dec. 2019
Research Associate	Department of Chemical Engineering, IIT Delhi	May 2018	Dec. 2018
Research Associate	Department of Chemical Engineering, IIT Bombay, Mumbai	Nov. 2017	May 2018

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	IIT Bombay, Mumbai	2018	8.11(CGPA)	Chemical Engineering
M.Tech.	IIT Bombay, Mumbai	2011	8.11(CGPA)	Chemical Engineering
B.Tech.	Harcourt Butler Technological Institute, Kanpur, U.P.	2009	73.52%	Chemical Engineering
Intermediate	U.P. Board	2002	74.8%	Physics, Chemistry, Mathematics, English, Hindi
High School	U.P. Board	2000	61%	Mathematics, Science, Social Science, Hindi, English, Sanskrit

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9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Anti-Ragging Committee member	Institution	26-02-2021	Till date
Verification of the Degree certificate of the chemical engineering department for convocation 2021	Institution	27-09-2021	Till date
The Physical verification of Assets for FY 2020-21,2021-22 for the Chemistry department	Institution	10-01-2022	-
M.Tech. Project DPEC committee member	Department	July-2020	June-2021
National Board of Accreditation Team Member	Department	July-2020	December-2020
Data Acquisition and Documentation Committee member	Department	March - 2021	June-2022
UG Curriculum Committee chairman (B.Tech. II Year)	Department	July – 2021	June-2022
National Board of Accreditation Team Member (UG-SAR)	Department	July-2021	June-2022
Board of Syllabus Committee member	Department	January-2022	June-2022

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2021	InSc Young Researcher Award	Institute of Scholars
2020	Video Making Competition (Category C)	Ministry of Science and Technology, Ministry of earth sciences and Ministry of Health and Family Welfare, Government of India
2021 - 2022	Best Young Woman Faculty Award	<i>Novel Research Academy</i>

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12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2020	National Postdoctoral Fellow	SERB	January-2020	May-2020

13. Details of Academic Work

(i) Curriculum Development

Launched two new UG courses-

- a. Interfacial Engineering;
- b. Statistical Thermodynamics

(ii) Courses taught at Postgraduate and Undergraduate levels

PG Level courses:

- a. Analytical Instrumentation (M.Tech.-PCI)
- b. Ecology for Engineers (M.Tech.- Chemical Engineering)
- c. Extramural Lecture Series (M.Tech.-PCI)

UG Level Courses:

- a. Industrial Process Biotechnology
- b. Water Treatment Technology
- c. Biochemical Engineering
- d. Biorefinery Engineering
- e. Chemical Reaction Engineering Laboratory
- f. Mass Transfer Laboratory

(iii) Projects guided at the Postgraduate level

S. No.	Title of the Project	Guide / Co-Guide	Roll Number of Student	Awarded year
1.	Investigation on the Electro-hydrodynamic Behaviour of Compound Drop Under High Electric Field	Guide	Bharath Bhaskaran (202119005)	2021
2.	Aqueous Electrolytes: Opportunity as low-cost energy devices	Guide	Abdul Nafi Boobacker (202120001)	2022

(iv) Other contribution(s)

Under Graduate Project Guided

S.No.	Title of the Project	Guide / Co-Guide	Roll Number of Student	Awarded year
1.	Design of sulphuric acid plant for lead acid batteries	Guide	B.Varun (102117012)	2021
2.	Design of sulphuric acid plant for	Guide	Dheeraj.Babu.N	2021

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	lead acid batteries		(102117018)	
3.	Capacitive Deionisation using COMSOL Multiphysics	Guide	Atul Yadav (102118012)	2022
4.	Capacitive Deionisation using COMSOL Multiphysics	Guide	Divyansh Sharma (102118019)	2022
5.	Production of Succinic Acid from Lignocellulosic Biomass	Guide	G. DEEKSHA (102118021)	2022
6.	Production of Succinic Acid from Lignocellulosic Biomass	Guide	RASIKA N (102118053)	2022

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Project on Random verification of Annual Inventory on Hazardous Waste Management	Central Pollution Control Board (CPCB)	September-2021	August-2022	ongoing
Analysis of salt hydrates for thermal energy storage	Indian Institute of Chemical Engineers (IIChe)	February-2022	March-2023	ongoing
Phase analysis of salt hydrate in the presence of surfactant	NIT Tiruchirappalli	April-2021	March-2023	ongoing

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Ms, VIJAYALAKSHMI.A.C (Roll no. 402821052)	Development of electrodes using Capacitive Deionization for efficient ions removal from brackish water and industrial effluents	Supervisor	continued

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16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
19 th to 20 th November 2021	International Felicitation conference on “Environmentally Benign Processes, Products and Materials for Sustainable Ecosystem (EBPPM 2021)	International	Co-chairperson	organized at NIT Tiruchirappalli, <i>Sponsored</i> by Seshasayee paper and boards Ltd, Tamil Nadu	NIT Tiruchirappalli
12 th to 13 th March 2021	International conference “Recent Technologies and Advanced materials for green energy and sustainable environment (RTAMGESE-2021)	International	session chairperson and session coordinator	organized at NIT Tiruchirappalli, <i>Sponsored</i> by Shastri indo Canada Institute (SICI)	NIT Tiruchirappalli
10 th to 14 th August, 2020	Faculty Development Training Programme on <i>E-content Development</i>	National	Participant	organized at NIT Tiruchirappalli, <i>Sponsored</i> by MHRD, Government of India-Chennai.	NIT Tiruchirappalli
25 th to 30 th December, 2020	Faculty Development Training Programme on <i>Advanced Rechargeable Batteries: From Power to power</i>	National	Participant	<i>Organized</i> by Department of physics and Department of Chemical Engineering, IIT Roorkee, <i>Sponsored</i> by MHRD-TEQIP	IIT Roorkee

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23 th to 25 th March 2021	capability building of women faculty in Higher Education	Local	Participant	NIT Tiruchirappalli	NIT Tiruchirappalli
19 th to 23 rd July 2021	Quality assurance in Technical and Higher Educational Institutions and interpretation of requirements of NBA Accreditation	National	Participant	organized at NIT Tiruchirappalli, <i>Sponsored</i> by AICTE-MARGDARSHAN	NIT Tiruchirappalli
16 th to 20 th March 2022	Next-Gen Fuels: A sustainable Approach	International	Participant	organized by the Department of Chemical Engineering, NIT Tiruchirappalli, <i>Sponsored</i> by Shastri Indo Canada Institute (SICI)	NIT Tiruchirappalli

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue

18. Invited Talks delivered

Topic	Date	Inviting Organization
Thermodynamics of Electrolyte Solutions	11 th February 2022	<i>Department of Chemical Engineering, Amity School of Engineering and Technology.</i>
Hazardous Waste: Management and Treatment	21 st March 2022	<i>Kannur University, Kerala</i>

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19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	Indian Institute of Chemical Engineers (IIChe)	LM 72823
Life Member	International Association of Engineering (IAENG)	149539
Life Member	Institute of Scholars	InSc 20210186
Life Member	Institute For Engineering Research and Publication	IM87690341

20. Academic Foreign Visits

Country	Duration of Visit	Programme
Singapore	22 January 2015- 31 January 2015	International conference
Italy	12 May 2015 – 23 May 2015	International conference

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
J. Sahu and V. A. Juvekar	Development of a rationale for decoupling osmotic coefficient of electrolytes into electrostatic and nonelectrostatic contributions	<i>Fluid Phase Equilibria</i>	460	57-68	2018	
J. Sahu and V. A. Juvekar	Data on primary hydration characteristics of aqueous electrolytes	<i>Data in Brief</i>	19	486-494	2018	
J. Sahu and V. A. Juvekar	A view on Thermodynamics of Concentrated Electrolytes: Need to Modify of Electrostatic Contribution of Osmotic Coefficient	AIP Conference Proceedings	1966	020001- 1– 020001- 8	2018	
J. Sahu and V. A. Juvekar	Development of a model for electrostatic contribution to the osmotic coefficient of	<i>Industrial & Engineering</i>	58	7650- 7660	2019	

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	electrolytes	<i>Chemistry Research</i>				
L. V. Mohite, V. A. Juvekar and J. Sahu	Quantification of polymer-surface interaction using microcalorimetry	<i>Industrial & Engineering Chemistry Research</i>	58	7495-7510	2019	
J. Sahu and V. A. Juvekar	Use of partial molal enthalpy for refining the partition of water activity into electrostatic/nonelectrostatic components	<i>Journal of Solution Chemistry</i>	50	752-770	2021	

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
J. Sahu and V. A. Juvekar	Thermodynamics of Concentrated Electrolytes: Need for Modification of Debye-Hückel Theory	Proceeding of 3 rd Annual International Conference on Chemistry, Chemical Engineering and Chemical Process (CCECP 2015) Copyright © GSTF 2015 ISSN 2301-376	65-70	Proceeding of 3 rd Annual International Conference on Chemistry, Chemical Engineering and Chemical Process (CCECP 2015) Copyright © GSTF 2015 ISSN 2301-376	Hotel Fort Canning, Singapore	2015
L. V. Mohite, J. Sahu* and V. A. Juvekar	Quantification of polymer-surface interaction using microcalorimetry	Fourth International Symposium Frontiers in Polymer Science	50-58	Organised by Elsevier	Riva del Garda-Fierecongressi S.p.A., Parco Lido, 38066, TN, Italy	2015
J. Sahu, V. A. Juvekar	Partial molal enthalpies of	<i>CHEMCON-2017</i>	72-79	Organized by the	Haldia Institute of	2017

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	aqueous sodium chloride: Role of microcalorimeter			Haldia Regional Centre (HRC)	Technology, Haldia, West Bengal	
J. Sahu and V. A. Juvekar	A view on Thermodynamics of Concentrated Electrolytes: Need to Modify of Electrostatic Contribution of Osmotic Coefficient	AIP Conference Proceedings	1-8	International Conference on Inventive Research in Material Science and Technology	RVS Technical Campus, Coimbatore, India	2018
Abdul Nafi Aboobacker, Jyoti Sahu	Thermodynamic study of the phase behavior of salt hydrates	<i>CHEMCON-2021</i>	335-337	Advance Techniques in Chemical Engineering	CSIR- Institute of minerals and materials technology, Bhubaneswar, India	December 26-30, 2021

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Jyoti Sahu and Vinay A. Juvekar	A view on Thermodynamics of Concentrated Electrolytes: Need to Modify of Electrostatic Contribution of Osmotic Coefficient	Lap-Lambert Academic Publishing, Balti, 4 Industrial street, Moldova, Europe.	2018	ISBN: 978-613-9-88867-2