

CURRICULUM VITAE

Dr. Yennam Rajesh

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Date of Birth: 06-07-1986



PROFILE

Analytical and energetic doctoral researcher equipped with a solid chemical engineering background and an abundance of laboratory and computational experience. Exhibits an underlying commitment to achieve targeted objectives. Adept in supporting projects both as a leader and team player.

EDUCATION

Period	Qualification	College	Awarded in
2009 – 2014	Ph.D. (Chemical Engineering)	Indian Institute of Technology, Guwahati	05-03-2015
2007 – 2009	M.Tech (Chemical Engineering)	Andhra University, Vizag	23-12-2009
2003 – 2007	B.Tech (Chemical Engineering)	MVGRCE (JNTU Hyderabad)	18-05-2007
2001- 2003	Intermediate	Sai junior college	11-05-2003
2000- 2001	SSC	Raghavendra high school	30-04-2001

CORE COMPETENCIES

<u>Research Interests and Experiences</u>	<u>Soft Skills</u>
<ul style="list-style-type: none">• Development of low cost activated carbon adsorbents• Both batch and continuous adsorption research• Removal and recovery noble metals & gases• Characterization of Materials (Belsorb, RGA, SEM, Micrometrics, BET, FTIR, Bulk Density, Crushing strength and Attrition loss)• High selectivity adsorbents and MOF's synthesis• CO2 capture applications• Gas Separation from Petroleum Refinery off-gases• Atomic absorption spectroscopy Analysis• Drag reduction through different channels.• Polymeric Resin preparation and characterization	<ul style="list-style-type: none">• Mat Lab

WORK EXPERIENCE

Designation	Institution	Tenure
Assistant Professor	KK Wagh Educational Society and Research Nashik, Maharashtra	19-04-2021 to Till Date
Fixed Term Research Associate	HP Green Research and Development Centre, Bengaluru	03-07-2017 to 16-04-2021
Assistant Professor (on Adhoc Position)	National Institute of Technology Karnataka, Surathkal	29-12- 2017 to 12-05-2017
Assistant Professor (on Adhoc Position)	National Institute of Technology CALICUT, Kerala	11-08- 2014 to 07-12-2016
Research Scholar	Indian Institute of Technology Guwahati	29-12- 2009 to 05-03- 2015
Junior research fellow	NSTL(DRDO),Vizag	04-05-2009 to 22-12-2009

RESEARCH HIGHLIGHTS

PUBLICATIONS (INTERNATIONAL JOURNAL) (4)

- [1] **Yennam Rajesh**, Pujari Murali, Uppaluri Ramgopal. "Equilibrium and Kinetic studies of Ni (II) adsorption using Pineapple and Bamboo Stem based adsorbents" Separation Science and Technology, (2014) 49(4) 533-544.
- [2] **Yennam Rajesh**, Gummalla Namrata and Uppaluri Ramgopal. "Ni(II) adsorption characteristics of commercial activated carbon from synthetic electroless plating solutions" Desalination and water treatment, (2015), 57(29) 13807-13817
- [3] **Yennam Rajesh**, Uppaluri Ramgopal. "Effect of surfactant and sonication on Pd (II) adsorption using commercial activated charcoal from synthetic electroless plating solutions" Desalination and water treatment, (2016), 57 (54) 26073-26088.
- [4] **Yennam Rajesh**, Srinu Nagireddi, Gummalla Namrata and Ramgopal Uppaluri. "Preparation, characterization and Pd(II) adsorption characteristics of chitosan-AC composites from electroless plating solutions" Desalination and water treatment, (2017), 84, 279-291].
- [5] **Yennam Rajesh**, Uppaluri Ramgopal. "Development of activated charcoal adsorbent from bamboo (Bambuseae) waste for the removal of Pd (II) from synthetic electroless plating solutions" [submitted in Ecotoxicology and Environmental Safety].
- [6] **Yennam Rajesh**, Uppaluri Ramgopal. "Pd (II) Adsorption on commercial activated charcoal from industrial waste streams: Prediction of breakthrough curves" [submitted in Desalination and water treatment].

PUBLICATIONS (INTERNATIONAL CONFERENCE) (2)

- [1] **Yennam Rajesh**, Uppaluri Ramgopal*. "Preparation and Characterization of Natural Wood based Biosorbents from North-Eastern India". Third International Conference on Natural polymers, Bio-Polymers, Bio-Materials, their Composites, Blends, IPNs, Polyelectrolytes and gels: Macro to Nano Scales organized by Center for Nano science and Nanotechnology held in Mahatma Gandhi University, Kottayam, Kerala, 26th to 28th, October, 2012.
- [2] Yerragunta Manasa, Nadupuru Ankitha, Ponnala Swathi and **Yennam Rajesh***. "An Integrated review on Chitosan based Biosorbent and its Applications towards water treatment". International Conference on Natural Resource Restoration Technologies (ICNRT-2015), Department of Biotechnology at PSG College of Technology, Coimbatore, Tamilnadu, 18th to 19th, April 2015.

PUBLICATIONS (NATIONAL CONFERENCE) (8)

- [1] **Yennam Rajesh**, P.Madhavi and Subbarao.Ch.v "Drag reduction by addition of polymer in cylindrical Tank". ChemViz-2007 held at Department of Chemical Engineering, M.V.G.R.C.E, Vizianagram, Andhra Pradesh, 26th to 28th, October, 2007.
- [2] **Yennam Rajesh**, M.Bhargavi Devi, P.King. "Coupled Conduction-Radiation Heat Transfer Analysis in Participating Media Using Discrete Ordinates Method". CHEMO SPHERE-2K8 held at Department of Chemical Engineering, S.V.U.C.E, Andhra Pradesh, 27-29th, October, 2008.
- [3] **Yennam Rajesh**, P.King and V.S.R.K. Prasad. "Drag reduction by addition of polymer in conical Tank". Indian Chemical Engineering Congress, CHEMCON-2009 held at Department of Chemical Engineering, A.U.C.E, Visakhapatnam, Andhra Pradesh, 27th to 30th, December, 2009.
- [4] **Yennam Rajesh**, Uppaluri Ramgopal. "Removal of Ni (II) from aqueous solution using Banana pith as biosorbent". Reflux-I held at Department of Chemical Engineering, Indian Institute of Technology Guwahati, Guwahati, 6th to 7th, April, 2013.
- [5] **Yennam Rajesh**, Uppaluri Ramgopal. "Removal of Ni (II) from aqueous solution using Pine apple stem as biosorbent". Reflux-I held at Department of Chemical Engineering, Indian Institute of Technology Guwahati, Guwahati, 6th to 7th, April, 2013.
- [6] **Yennam Rajesh**, Uppaluri Ramgopal. "Fixed bed adsorption characteristics of Pd (II) on activated charcoal beads using synthetic electroless plating solutions". Reflux-II held at Department of Chemical Engineering, Indian Institute of Technology Guwahati, Guwahati, 28th to 29th, March, 2014.
- [7] **Yennam Rajesh**, Uppaluri Ramgopal. "Development of novel adsorbent from bamboo stem plant wastes for the application of wastewater treatment using adsorption process". Recycle-I held at Department of Civil Engineering, Indian Institute of Technology Guwahati, Guwahati, 6th, April, 2014.

[8] **Yennam Rajesh**, Uppaluri Ramgopal. "Adsorption characteristics of Pd (II) on activated charcoal beads in Fixed bed column by using synthetic palladium solutions". Sustainable development of environmental systems held at Center for the Environment, Indian Institute of Technology Guwahati, Guwahati, 20th to 21st, June, 2014.

RESEARCH PROJECTS (5)

Fixed Term Research Associate term handling Projects at HPGRDC:

Project #1: Development of Activated Carbon Adsorbents for CO₂ capture in H₂ PSA applications.

Description: Identification of suitable types of adsorbents for CO₂ capture in H₂ PSA applications. Synthesis and characterization of adsorbents. Adsorption studies of synthesized adsorbents and short listing of best materials. Modelling of adsorption isotherms to obtain isotherm fit parameters, selectivity, adsorption enthalpy etc.

Project #2: Identification and Synthesis of Metal Organic Frameworks (MOF) for CO₂ capture application.

Description: Based on the detailed literature survey, MOFs can be considered as promising candidates for the separation of CO₂ and hydrogen storage purpose. Identification and synthesis of suitable MOF materials having desired properties like higher adsorption uptake/selectivity, easier regeneration, and good stability.

Ph.D. Project: "Adsorption Characteristics of Activated Carbon Adsorbents for the recovery of Ni (II) and Pd (II) from Synthetic Electroless Plating Solutions"

Description: The Ph.D. thesis addressed the adsorption characteristics of Pd (II) on various types of activated adsorbents from synthetic electroless plating solutions. Various studied adsorbents include commercial and laboratory scale activated carbon and activated carbon-chitosan composite adsorbents. Data corresponds to comparative assessment of Pd (II) adsorption characteristics from synthetic electroless plating solutions with those obtained from aqueous solutions in the literature. Continuous Pd (II) adsorption characteristics were also investigated for activated carbon adsorbent beads. All in all, the thesis provided significant amount of data for Ni (II) adsorption and Pd (II) adsorption from synthetic electroless plating solutions. Fitness of relevant equilibrium and kinetic adsorption models was investigated for batch adsorption data. For continuous Pd (II) adsorption, standard models such as BDST, Yoon and Nelson model etc., were investigated. The obtained data demonstrated that the Pd (II) adsorption characteristics of synthetic electroless plating solutions are distinctly different from those obtained for aqueous solutions. The obtained data is regarded to serve as a standard reference for furthering research in the field of adsorption based recovery and reuse of Pd (II) from electroless plating solutions.

M. Tech. Project: “Drag Reduction by Addition of Polymer in the Conical Tank.”

Description: A study of drag-reducing flow in exit pipe was conducted to a conical tank. The turbulent flow properties of aqueous solutions of polyethylene oxide (PEO) were studied. This is the most evident in turbulent boundary layers, in which dissolve in parts per million quantities of long chain flexible polymers in to solution can reduce turbulent friction losses when compared with that of the solvent alone. The experimental data obtained indicate a significant dependence of the turbulent flow properties on the molecular structure of the polymers used.

In the present study the polymer used is low molecular weight polyethylene oxide (PEO); it is water soluble and resists shear degradation. A mathematical equation for efflux time for gravity draining of a Newtonian liquid from a conical tank through an exit pipe located at the bottom of tank when the flow in the pipe line is turbulent is developed based on macroscopic balances. The equation is fine-tuned with the experimental data and an empirical equation for friction factor is developed. The efflux time equation so developed will be of use in arriving at the minimum time required for draining the tank.

B.Tech. Project: “Replace the high pressure steam instead of hot oil in Peda Fractionation” at NACL, Srikakulam, Andhra Pradesh.

Description: NACL is presently using thermic fluid in the re-boiler one of the distillation columns. They are contemplating use of steam in place of thermic fluid. Hence, the present study is aimed at exploring the above possibility. Energy balances and mass balances are carried out across the re-boiler to arrive at steam pressures and quantity requirements. Cost benefit analysis is also carried out. Safety aspects of using steam in place of oil are discussed.

Achievements/Awards

- **Received First Prize in Technical Quiz competition conducted by HPGRDC on National Science Day.**
- **Received the “Best Research Associate” Award from HPCL Green R&D Center, Bangalore (on 26th January, 2020).**
- Participated in work shop on **Battery Technologies and Electric Mobility** conducted by **HPCL Green R&D Center, Bangalore (8th -9th March, 2018).**
- Participated in **(CATSYMP-23) National Symposium** conducted by Overall catalysis groups of India, Bangalore **(17th -19th February, 2018).**
- Given a guest lecture on **Novel approaches in Adsorption process** in FDP (NST-2015) conducted at Chemical Engineering Department in NIT Calicut.
- Research proposal (Adsorption of platinum metals on polymer resin from electroless plating solution, application of catalyst synthesis) accepted in **CSIR, total funding cost is 25lakhs**
- Institute (MHRD) research fellowship (IIT Guwahati) during the period 2009-2013.
- UGC fellowship during M. Tech in 2007-2009.
- Achieved all India 2644th rank in GATE 2007.
- Bagged the second prize in Technical Quiz in CHEA-2006 and ChemVIZ-2007 held in Department of chemical Engineering, M.V.G.R.C.E, Vizianagram, and Andhra Pradesh.
- One-month industrial training at Coromandel Fertilizers Limited in Gajuwaka, Visakhapatnam, Andhra Pradesh.
- Achieved the NCC-B Certificate.
- Achieved as School Topper (2001), Raghavendra High School, Podili, Prakasam, Andhra Pradesh.

Reviewer of the Peer-Reviewed International Journals

- Desalination and Water Treatment.
- Separation Science and Technology.
- International Journal of Biological Macromolecules.
- International Journal of Cheminformatics and Chemical Engineering.
- Journal of Water Process Engineering

PROFESSIONAL TRAINING

- Participated in DST SERB sponsored Five Days Online Short Term Training Programme (STTP) on **Electrochemical Technology for Environmental Treatment and Clean Energy Conversion - ECTCEC 2020** Organized by Department of Chemical Engineering, National Institute of Technology Calicut during 16th – 20th November 2020.
- One-day training on “**Swagelok training on Tube Fitting Installation Essentials**” conducted at HPCL Green R&D Center, Bangalore.
- Participated in TEQIP-II sponsored workshop on **Modelling and Scale up of Bioreactors-2017** conducted at Chemical Engineering Department, NIT Karnataka, Surathkal (24-03-17 to 25-03-17).
- Participated in Global Initiative of Academic Networks (**GIAN**) course on **Multidimensional Engineering Approaches for Resolving Complex Environmental Issues-2016** conducted at Chemical Engineering Department in NIT Calicut (19-12-16 to 23-12-16).
- Participated in **Faculty Development Programme on Novel Separation Techniques-2015** conducted at Chemical Engineering Department in NIT Calicut (14-06-15 to 19-06-15).
- Participated in TEQIP-II sponsored workshop on **Pedagogical Aspects of Engineering Education** organized by the National Institute of Technology Calicut on 8th and 9th of August 2015.

Extra curricula activities

- Student’s representative in Raghavendra High School, Podili, Prakasam (Dist.), Andhra Pradesh.
- Actively participated in different NSS activities in Sai junior college, Podili, Prakasam (Dist.), Andhra Pradesh.
- Served as a volunteer in ChemViz-2007 held in Department of Chemical Engineering, M.V.G.R.C.E, Vizianagram, and Andhra Pradesh.
- Served as a volunteer in International work shop on “Advanced methods for data processing and parametric estimation in chemical processes” organized by Department of Chemical Engineering, A.U.C.E, Visakhapatnam, and Andhra Pradesh.
- Participated as active member in 95th Indian science congress held at A.U.C.E., Visakhapatnam, and Andhra Pradesh.
- Participated in the three-day work shop on “Engineering problem solving using MATLAB” held during 27th -29th February, 2008 at G.V.P.C.E., Visakhapatnam, A.P.
- Participated and represented as department in PG Boys “Inter Department Badminton Tournament” in Advaya –I held at IIT Guwahati during April 2012.
- One day visited to IOCL Guwahati Refinery on the occupation of Reflux-I held in IITG.

- More actively Participated in Blood Donor Camps held in Indian Institute of Technology Guwahati conducted every year Techniche and Alcheringa, during 2009-2013.
- Actively participated in workshop on Battery Technologies and Electronic Mobility”, held during 8th-9th march2018 at HPCL Green R&D Center, Bangalore.
- Bus coordinator for RA/PA at HP green R&D Center during 2017-till date.

REFEREES

- Dr. Ramgopal VS Uppaluri, Professor, Chemical Engineering Department, IITGuwahati.
Email Id: (**ramgopalu@iitg.ac.in**)
- Dr. Mihir Kumar Purkait, Professor, Chemical Engineering Department, IIT Guwahati.
Email Id: (**mihir@iitg.ac.in**)
- B Rama Chandra Rao, General Manager of HPCL Green Research and Development Center, Bengaluru, Email Id: (**ram@hpcl.in**)
- TA Rajiv Kumar, Chief Manager of HPCL Green Research and Development Center, Bengaluru, Email Id: (**tarajivkumar@hpcl.in**)

DECLARATION

I hereby declare that the above information provided by me is true to the best of my knowledge and subject to my verification by the authorities.

Date: 8 May 2021
Place: 2nd Floor, Nilangan Pride, Amrutdham,
Panchavati, Nashik, Maharashtra-422003