CURRICULUM VITAE

Dr. Anuradha Vijay Jagtap
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OBJECTIVE

To develop my career as a Professional, where I will be a valuable team member, contributing quality ideas and work to an organisation with ample scope for both individual and organizational development.

ACADEMIC CREDENTIALS

Degree	Specialization	Board/University	Year	CGPA/%	Division
Ph.D.	Catalysis and Inorganic Chemistry	CSIR -National Chemical Laboratory, Pune	2025	9.06	-
M.Sc.	Organic Chemistry	Savitri Bai Phule Pune University (SPPU)	2016	71.32	First class with an Outstanding grade
B.Sc.	Chemistry	Savitri Bai Phule Pune University (SPPU)	2014	82.3	First class with distinction
12^{th}	Chem, Phy, Maths, Bio	Maharashtra State Board	2011	64.83	First class
10^{th}	Physical Science, Maths	Maharashtra State Board	2009	83.53	First class with distinction

KEY ACADEMIC PROJECTS

Ph.D. PROJECT (Supervisor: Prof. C.P. Vinod) [Jan'18 – Jan'25]

- Title: Developing New Catalytic Material for C1 Molecule Activation
- The objective of the thesis is to develop a catalyst for converting greenhouse gases to value-added chemicals. We use a combination of spectroscopy and microscopy to understand the interfacial properties. Coupled in-situ techniques, based on FTIR, XPS, and Raman, are routinely used to understand various aspects.

AWARDS / SCHOLASTIC ACHIEVEMENTS

- **Senior Research Fellow (UGC-CSIR** - Council of Scientific and Industrial Research, India) (January 2020 – January 2023)
- **Junior Research Fellow (JRF – UGC-CSIR)**, India (January 2018 – January 2020)
- **Qualified for GATE (Graduate Aptitude Test in Engineering)** conducted by Indian Institute of Technology (IIT)-Roorkee in March 2017 **(All India 1254th Rank)**
- **CSIR/UGC-National Eligibility Test (NET – June 2017)** qualified for enrolment in Ph.D. **(All India 45th Rank).**
- **CSIR/UGC-National Eligibility Test (NET- December 2017)** qualified
- **Awarded with First Prize in "Intercollegiate Quiz Competition 2015**", MES A. Garware **College, Pune.**
- **Awarded with First prize in "CHEM-FEST-2014**" for the Essay Cultural Event Organized by MES A. Garware College on 29th December 2014.

RESEARCH SKILLS

- Preparation of heterogeneous catalysts, morphology-controlled nanoparticles, and their application in catalysis
- Development of (noble and non-noble metal-based) mono, bi-, and multimetallic catalysts via different synthesis routes to control the shape and size of nanoparticles
- Fine-tuning of catalyst for efficient CO_2 utilization to value-added product (CO, CH_4, hydrocarbons and methanol etc.)
- Catalyst scale-up for industrial projects of CO_2 utilisation
- Screening of scale-up catalyst (stability, recyclability, conversion selectivity, yield, etc.)
- Operation of a continuous fixed-bed reactor for methanation and the RWGS (reverse water gas shift) process
- Operation of high-pressure fixed-bed reactor and batch reactors for the CO_2 hydrogenation to methanol process
- Analysis of data obtained from basic material characterisation techniques.
- Morphological analysis: Electron microscopy imaging (TEM, HRTEM, FE-SEM)
- Chemical analysis: Gas chromatography, NMR spectroscopy (solid state/solution state),
- FTIR, GC-MS, UV-VIS spectrophotometry, X-ray Photoelectron Spectroscopy, TPD, TPR,
- XRD, chemisorption. Thermal Analysis: Thermogravimetric analysis (TGA), differential

- scanning calorimetry (DSC), Surface area and porosity measurements: BET.
- Instrument handling: GC, FTIR, UV-VIS spectrophotometer, XRD, BET, spectrophotometer, High throughput reactors, Fixed-bed reactors, Batch reactors, and all basic lab equipment.

RESEARCH EXPERIENCE

Project Assistant -1 **[August 2023 – June 2024]**

Worked as a Project Assistant -1, in a project titled Carbon Capture, Utilisation and Storage (CCUS). at National Chemical Laboratory, Pune,

LIST OF PUBLICATIONS

1. Jyotsna P. Bajpai, Sharad Gupta, Devender Goud, Diku Raj Deka, **Anuradha Vijay Jagtap**, Pawan Kumar, Momin Ahamed, Sebastian C. Peter, C.P. Vinod, Exploring the electronic modulation in controlling the activity and selectivity of Ni-Au-In based catalyst in atmospheric pressure CO_2 hydrogenation**.** https://doi.org/10.1016/j.cej.2025.160705

2. **Anuradha Vijay Jagtap**, Mahesh Kumar Bamnia, Ashakiran Maibam, Jyotsna Paliwal Bajpai, Sharad Gupta, Sharon K Thomas, Niteen B Dabke, C.P. Vinod, Unravelling the Cu-Co nanoparticle synergy over Ceria-Zirconia support toward efficient reverse water gas shift (RWGS) conversion under H2 lean conditions. https://doi.org/10.1016/j.cej.2025.160705

3. Sharad Gupta, **Anuradha Vijay Jagtap**, C. P. Vinod, Exploring the CeO2 Support Morphology for Carbon Dioxide Hydrogenation Reaction using Nickel Catalyst. J. Phys. Chem. C 2024, 128, 44, 18782–18792. DOI: https://doi.org/10.1021/acs.jpcc.4c05258

4. **Anuradha Vijay Jagtap**, Pawan Kumar, Sharad Gupta, Abharana Nagendra, Shambhu Nath Jha, D. Bhattacharyya, Thalasseril G. Ajithkumar, and C. P. Vinod, Atmospheric-Pressure Continuous-Flow Methane Oxidation to Methanol and Acetic Acid Using H2O2 over the Au–Fe Catalyst, ACS Sustainable Chemistry & Engineering 2024 12 (23), 8958-8967. DOI: 10.1021/acssuschemeng.4c02993

5. P. Kumar, **Anuradha. Vijay Jagtap**, S. Gupta, C.P. Vinod, La-Cu-based heterogeneous perovskite catalyst for highly selective benzene hydroxylation under mild conditions, Chem Asian J. doi.org/10.1002/asia.202200788

6. **Anuradha Vijay Jagtap**, S. Gupta, C. P. Vinod. Boosting CO2 methanation over Ni/CeO2 nanorod catalyst by nitrogen doping. (To be communicated)

7. **Anuradha Vijay Jagtap**, S. Gupta, Ankita Shelke, Sudheesh Kumar, Pawan Kumar, T. G. Ajithkumar, C. P. Vinod. Isolated iron silica catalyst for selective CO2 hydrogenation to CO - Reverse Water Gas Shift (RWGS) reaction. (To be communicated)

8. Pawan Kumar, **Anuradha Vijay Jagtap**, Nikhil S., Nita Patil and C. P. Vinod, Continuous flow oxidation of methane to methanol using in-situ generated H2O2 (To be communicated)

LIST OF PATENTS

1. CATALYST FOR THE PARTIAL OXIDATION OF SUBSTRATE TO VALUE-ADDED PRODUCT UNDER AMBIENT CONDITIONS, C. P. Vinod, Anuradha V. Jagtap, M.K.Bamnia (CSIR-NCL Pune),(**WO 2024/075136 A1** published on 11th April 2024)
2. A HETEROGENOUS CATALYST FOR CO_2 HYDROGENATION AND A PROCESS FOR THE PREPARATION THEREOF C. P. Vinod, Anuradha V. Jagtap, Pawan Kumar, S.Gupta (CSIR-NCL Pune), (**WO 2025/046608 A1** published on 6th March 2025)
3. Fe-CRYSTALLINE SILICA BASED MATERIALS FOR CATALYTIC REACTIONS AND ITS PREPARATION THEREOF" submitted on 22-11-2022. **(Application no. 202211062721**)
4. MIXED METAL-BASED CATALYST FOR CO2 UTILIZATION AT AMBIENT AND HIGH-PRESSURE CONDITIONS AND MODERATE TEMPERATURES
   (File no. 2023-INV-0079 under process)

CONFERENCE PRESENTATIONS

1. Presented a poster titled "**Development of bimetallic catalyst for CO_2 Valorisation**" on Science Day at CSIR-National Chemical Laboratory, Pune, Feb 2018
2. Presented a poster titled "**Developing new catalytic material for C1 molecule activation**" in the OPSAR conference held in RRCAT, Indore, India, May 2018.
3. Delivered an oral talk titled "**Tuning the efficiency of CeO_2 for CO_2 hydrogenation by N-doping**" in Chem Cat Con 2.0 Conference 2022 at IIT, Gandhinagar, India, May 2022.

PERSONAL DETAILS

- Languages: Marathi, Hindi, Sanskrit, English
- Date of birth: 30-06-1993
- Marital status: Married
- Interested in Arts and Literature.

REFEREE NAMES

1. Prof. C.P. Vinod **Chief Scientist (AcSIR)** Catalysis and Inorganic Division, CSIR-National Chemical Laboratory, Pune-411008 Email: cp.vinod@ncl.res.in Tel: +91 7709580260	**2. Dr. M. Banu** **Senior Scientist** Catalysis and Inorganic Division, CSIR-National Chemical Laboratory, Pune-411008 Email: m.banu@ncl.res.in Tel: +91 9108563710	**3. Prof. H. R. Pawar** **Department of Chemistry, MES** Abasaheb Garware College, Deccan Pune-411004 E-mail: haripawar2010@gmail.com Mob: 9975668976