

Curriculum Vitae(CV)

1. PERSONAL DOSSIER

Name : Dr. Shilpa Kumari
Current Position : Senior Scientist
Organization : CSIR-National Environmental Engineering Research Institute ,
 Nagpur -440020, India
Linguistic Abilities : English (F), Hindi (F)
Marital status : Single
Mail id : s.kumari@neeri.res.in (O)
Phone no : +91-712-2249885-88 ; Ext -407



2. EDUCATIONAL DETAILS (GRADUATION ONWARDS)

S. No.	Institution	Degree Awarded	Year	Field of Study
I)	Academy of Scientific & Innovative Research, Ghaziabad, Uttar Pradesh	Ph.D. 8.47 CGPA	2018- 2024	Engineering Sciences
II)	Academy of Scientific & Innovative Research, Ghaziabad, Uttar Pradesh-	M. Tech 8.75 CGPA	2011-2013	Environmental Systems Engineering & Modeling
III)	Birsa Institute of Technology, Sindri, Government of Jharkhand	B. Tech 8.50 CGPA	2007-2011	Chemical Engineering

3. PROFESSIONAL CAREER (STARTING WITH THE MOST RECENT EMPLOYMENT)

S. No.	Institution	Position	From (Date)	To (Date)
I)	CSIR-NEERI, Nagpur	Senior Scientist (Level 12)	24/04/2021	Present
II)	CSIR-NEERI, Nagpur	Scientist (Level 11)	24/04/2017	23/04/2021

III)	M/S Vishwaraj Infrastructure Limited	Assistant Manager- Strategy	Dec 2015	Dec 2016
IV)	CSIR-NEERI, Nagpur	Quick Hire Scientist Trainee	Aug 2011	Nov 2015

4. SKILLS & RESEARCH INTEREST

Skills

Software / Products: DWSIM , COMSOL, SPSS, MINITAB, ORIGIN, ARCGIS, MATLAB, LATEX, MICROSOFT- VISIO, ORIGIN LAB, END NOTE, MENDELEY, CHEMSEP, MICROSOFT EXCEL, POWER POINT, WORD, VISIO, MS –PROJECT, MIKE

Research Area

Solar Energy Utilization , Flyash Utilization, Menstrual Waste Management , Green Hydrogen , Energy Conservation , Thermal management, Green Crackers , Digital Quality Control, Policy Interventions, Techno economics & Feasibility Studies, Air pollution monitoring and Control

5. HONORS/ AWARDS

- i. **Member of International Union for Conservation of Nature (IUCN) Commission on Environmental, Economic and Social Policy(CEESP)**
- ii. **The Most Prestigious “CSIR- Technology Award 2021” (Inventors)** in Physical Sciences including Engineering for the Development of green Crackers having reduced chemical usage and environmental footprint.
- iii. **Invited speaker** at “International conference on Environmental Science & Green energy” at **Paris, France (13-15 May 2024).**
- iv. **Got best Paper presentation Award** entitled” Kinetics and reactor modeling of catalytic reactor for hydrogen purification” in Chemical engineering congress (CHEMCON 2013) held at ICT, Mumbai organized by institute of chemical engineers.
- v. **Reviewer for** “Environmental Progress & Sustainable Energy” an journal of “American Institute of Chemical Engineers”, “International journal of environmental science and technology” and “Renewable & sustainable energy reviews”.
- vi. **Editorial Board Member** of “International Journal of Energy and Environmental Science”
- vii. Featured in Institute’s Patrika “ *Paryawarniya Saksharta* “ as the corresponding author for the composition on Environmental Awareness Theme
- viii. Felicitation by **Nagar Rajbhasha Karyanwayan Samiti (NARAKAS)** , Department of Official Language, Ministry of Home affairs , Govt. of India for citing the poem.

- ix. Felicitation as **Special Delegate Speaker** at Vincent Pallotti College of engineering for the INVENTOMENIA 2019 event on the occasion of Engineer's Day.
- x. Invited talk at Defense Institute of advanced technology (DIAT-PUNE) for **the "National Conference on Chalcogenide Compounds"**(16-17th March 2023)
- xi. Invited panelist for the event "**Women in Science & Entrepreneurship** " organized by Indian Women Scientists Association (2nd April 2023)
- xii. Felicitation as **Special Guest Speaker at Regional Ayurveda Research Institute , Ministry of Aayush** on the occasion of Women's Day 2019
- xiii. Trained professional on **ISO/IEC 17025:2005 -Laboratory Management** System and Internal Audit , 2018
- xiv. Trained professional on Internal Quality Auditor For **ISO 9001: 2015 Quality Management System**
- xv. **Lifetime member of "Organization for Women in Science for the Developing World" (OWSD)**
- xvi. Member of The Indian Society for Technical Education (**ISTE**)
- xvii. **Member of Material's Research Society of India (MRSI)**

6. RESEARCH PROJECTS (ONGOING)				
S. No.	Title of Project	Source of Funds	Role	Duration (from – to --)
a)	Facility Creation For Testing And Research And Development For Fire Crackers – Raw Materials Compositions And Emissions(RACE)	Government agency	Role : Co-PI	APRIL 2020- MARCH 2023
b)	Hybrid Broad Band Absorption PV Cell Based Water Electrolysis For Solar Hydrogen Technology	Department of Science & Technology	Role : Co-PI	JAN 2019- SEP 2022
7. RESEARCH PROJECTS (COMPLETED)				
S. No.	Title of Project	Source of Funds	Role	Duration
a)	Technology And Product For Management	CSIR	Role : Co-PI	April- Sept-2020

	Of COVID 19Pandemic			
b)	Smart Disposal And Carbonization System For Menstrual Waste Management	CSIR	Role : PI	March2018- Jun 2020
c)	Feasibility Study On Extraction Of Cenosphere From Fly Ash, NTPC Talcher Thermal Power Plant	Consultancy Project: NTPC	Role : Co-PI	Oct 2018- Sept 2020
d)	Solar Energy Based Cooking System	CSIR	Role : PI	Aug 2020- July 2021
e)	Enhanced efficiency of PV by avoiding bio-films & Water heating	Consultancy : NOCIL	Role : Co-PI	Sep 2018- March, 2020
f)	Popularization and implementation of Green Crackers in India	CSIR-NEERI (Internal)	Role : PI	Oct 2019- Oct 2020
g)	Rising High Through Hygiene Management (RHYTHM)- “Collection , handling & Treatment of menstrual waste”	CSIR-NEERI (Internal)	Role : Co-PI	Nov 2017 – April 2019
h)	Study of CSIR technologies for Mass housing project	CSIR	Role : Co-PI	July 2018- July 2020
i)	Solar Water Disinfection Systems for Potable water “SWADIS	CSIR	Role : Team Member	Aug 2016- Aug 2018
8	Publications & Conference Proceedings			

Sr. No	Title	Journal	Authors	Year
i)	Efficiency enhancement of photovoltaic panel by heat harvesting techniques	Energy for Sustainable Development 73 (2023) 303–314	Shilpa Kumari Ankit Bhende Aniruddha Pandit ,Sadhana Rayalu	2023
ii)	Functional additives: Promising material for reducing emissions in sound emitting pyrotechnic formulations	Journal of Cleaner Production (IF : 9.3) Volume 337, 20 February 2022, 13046	Suraj Junghare, Girivyanekatesh Hippargi, Payal Mane, Satish Lokhande, Shilpa Kumari, Rakesh Kumar, Sadhana Rayalu;	2022
iii)	Thermal Management of Solar Panels for Overall Efficiency Enhancement Using Different Cooling Techniques	International Journal of Environmental Research https://doi.org/10.1007/s41742-022-00431-8	Shilpa Kumari Ankit Bhende Aniruddha Pandit ,Sadhana Rayalu	2022
iv)	Thermite driven pyrotechnic formulation with promising functional performance and reduced emissions	Journal of Hazardous Materials (IF- 10.5) Volume 424, Part B, 15 February 2022, 127345	Suraj Junghare**, Shilpa Kumari **, Avinash Chaudhary1, Rakesh Kumar1, Sadhana Rayalu ** = Equal Contribution	2021
v)	Pyrotechnic formulation for reduced emissions: Green Crackers in India	National Conference on Chalcogenide Compounds and Applied Chemistry (NC3 -2023)	Shilpa Kumari1,, Sadhana Rayalu1*	2023
vi)	Hydrogen ecosystem for stationary power backup application for telecommunication towers	Industry – Academia meet conclave ,organized b Department of Science and Technology at IISER-Trivandrum	Sadhana Rayalu Shilpa Kumari*	2020
vii)	Exceedance Level of Air Pollutants in an	International Journal of Emerging Trends in Science and Technology	B.Sharad Rao, A.Anjekar,	2018

	Urban Area as a Tool for Designing Air Purifiers		P.S.Rao S.Kumari *, S.Rayalu, Laukik Raut	
viii)	Swachh Bharat: Role of Science & Technology Promises & Challenges	<i>National Science Seminar</i>	Sadhana Rayalu, Maddigapu Pratap Reddy, Shilpa Kumari *	2017

9 Patents & Design Registrations

Patent

Sr. No.	Title	Names of other inventors	Country	Filed on (Date)
1	Safe Aluminium Less Cracker (SAFAL)	S. S. Rayalu, Rakesh Kumar, Shilpa Kumari , G.K. Hippargi, P. Nagababu, S.A. Praveen, Anirban Middey	India	Patent No: 524355 Granted on : 13/03/2024
2	A process for rapid hydrothermal carbonization of wastes with minimal emission	Dr. Sadhana Rayalu, Ms. Shilpa Kumari , Ms. Kiran Manohar, Ms. Arshiya Tarannum	India	Patent No: 480758 Granted on: 12/12/2023
3	A functional PV powered facilitated water electrolyser system for solar hydrogen generation and processes thereof	Dr. Sadhana Rayalu, Ms. Shilpa Kumari , Sehba, Meenal, Kushagra. Neha, Aparna	Foreign - WO	PCT/IN2023/050276 (IN202211016562, WO2023181071) Filed
4	Fire Cracker: Safe Water And Air Releaser (SWAS)	S. Rayalu, Rakesh Kumar, G.K. Hippargi, Shilpa Kumari, M. Pratap Reddy, Anil Bhanarkar	India	Filed Application No: 201911012432

Design Registrations

Sr. No.	Title	Year	Authors
1	Functional PV panel with heat harvesting devices Gen 2	Granted Design Registration No: 362423-001	Shilpa Kumari Sadhana Suresh Rayalu Ankit Bhende

2	Functional PV panel with heat harvesting devices and water cooling bottom reactor Gen 3	Granted Design Registration No: 362424-001	Shilpa Kumari Sadhana Suresh Rayalu Ankit Bhende
3	Solar Air purifier with Absorber Surface	Granted On: 14/03/2024 Design No: 362422-001	Shilpa Kumari , Sadhana Suresh Rayalu Kushagra Gabhane Sangita Goel
4	Solar water Dis-Infection Copper Tube	Design No: 315791-001 Granted on : 29/04/2022	S Rayalu, Reddy, Shilpa Kumari , Hippargi, Atya Kapley
5	Solar Air purifier without Absorber Surface retrofitted with PV panel	Granted Design Registration No: 362956-001	Shilpa Kumari , Sadhana Suresh Rayalu Kushagra Gabhane Padma Rao
6	Solid Waste Disinfection (Sow-D) Bin	Filed in : 2021 <i>027DN2021</i> In process : 363059-001	Kiran Dhanraj Manohar Kushagra P. Gabhane Aniruddha Dhupe Shilpa Kumari Sadhana Suresh Rayalu Arshiya Tarannum
7	Instant Solar Water Disinfection Pasteurizer	Granted -2019 Design Reg No: 302183	Dr. Rayalu, Dr. Reddy, Dr. Hippargi , Ms. Shilpa Kumari