

Dr.Sowjanya Kandadai

PROFESSIONAL EXPERIENCE:

➤ **ASSISTANT TEACHER AT** Edubridge Learning Center,
Amstelveen, The Netherlands

Jan 2023 to July 2023

- Delivering lessons to students and assessing their work.
- Assisting other teachers in preparing lesson plans.
- Documenting daily lesson progress and student assessments.

Picking up children from school whenever necessary.

➤ **Project Assistant in CSIR NGRI (Gas hydrate division)**

Hyderabad, India

10/2014 to 03/2017

Project Title: Synthesis and characterization of gas hydrates in laboratory

➤ **Project Assistant in CSIR NGRI (Gas hydrate division)**

Hyderabad, India

07/2018 to 01/2019

Project Title: Carbon dioxide & Methane Hydrate phase stability in sandy and clay environment: Laboratory studies

- Worked as a project assistant/PhD research scholar under Dr.P.S.R.Prasad, chief scientist, Gas hydrate division CSIR NGRI.
- Worked extensively on laboratory synthesis of gas hydrates and its characterization techniques.
- Major part of the work was focussed on CO₂ and CH₄ gas storage applications using hydrate technology in porous media.
- Studied CO₂ and CH₄ hydrates formation and dissociation in different porous mediums for their storage capacities and thermal equilibrium conditions.
- Synthesized gas hydrates using the pressure vessels of various capacities.
- Gained experience in handling and minor troubleshooting of high-pressure reactor cells.
- Studied formation/dissociation kinetics and stability of gas hydrates in different mediums.
- Characterized gas hydrates using Laser Raman Spectroscopy, IR spectroscopy, XRD, and DSC at ambient and low temperatures.



- Skilled and familiar with the fundamental lab procedures in solution preparation, material synthesis, analytical balances, sample preparation for characterization and safety health measurements.
- Worked in a 2–6-member team in exploring different techniques and methods in gas hydrates storage and transportation.
- Gathered data and maintained accurate records for the laboratory
- Under the guidance of the project leader trained a few summer interns in the laboratory procedures
- Skilled at detecting, resolving issues, and understanding and analyzing data.
- Maintained good communication with co-workers.

STUDY PROJECTS:

11/2013-05/2014 Masters Dissertation

“Pure Hap (Hydroxyapatite) as ammonia gas sensor”, School of Physical sciences, Swami Ramanand Teerth Marathwada University.

- Used wet chemical process of material synthesis to synthesize hydroxyapatite.
- Two-probe method is implemented to measure the change in resistance of the sensor substrate.
- Also gained experience in studying XRD patterns.

07/2014-10/2014 Study Project

Worked in the applied magnetism laboratory, department of physics, IIT Madras, under the guidance of Dr.V. Srinivas.

- Gained experience in different synthesis processes of magnetic nanoparticles.
- Have been introduced to characterization techniques like TGA, DTA, DSC, and XRD.
- Gained experience in sample preparations for different characterization techniques like pellet making, and thick films.



EDUCATION:

- **2018-2023 - Ph.D. Physics,**
Adikavi Nannaya University/ CSIR-National Geophysical
Research Institute.
Thesis title: “Gas hydrate formation under simulated natural conditions for sustainable gas
storage.”
- **2012-2014 - M.Sc. Physics,**
Swami Ramanand Teerth Marathwada University,
Vishnupuri, Nanded, Maharashtra, India 431605.
- **2009-2012 - B.Sc. Mathematics, Physics, Chemistry,**
N.E.S. Science College, Nanded Maharashtra, India 431605.
- **2007-2009 - Intermediate Mathematics, Physics, Chemistry, computer sciences**
Yeshwant Mahavidyalaya, Nanded Maharashtra, India 431605.

COMPUTER SKILLS

- Origin software for data analysis and
graphs,
- MATLAB- basic knowledge,
- C++ language- basic knowledge.

LANGUAGES

- **Telugu** (native language)
- **English** (proficient)
- **Hindi** (proficient)
- **Tamil** (Intermediate)
- **Marathi** (Intermediate).

PUBLICATIONS

Peer-reviewed Journal Publications: International Journals

1. K. Sowjanya, P.S.R. Parasd, “Sustainability of hollow silica matrix for clathrate
hydrate recycling” Journal of natural gas science and engineering, Volume 34, August
2016, Pages 585–589.
2. B. Kiran, K. Sowjanya, Ch. V. V. Eswari, P.S.R. Parasd, “Illustration of hydrate-based
methane gas separation in coal bed methane type gas composition at lower pressures”
current science, Volume 114, no. 3, February 2018, Pages 661-666.



3. B.SaiKiran, K. Sowjanya, P.S.R. Prasad, J.H. Yoon, “Experimental investigations on tetrahydrofuran–methane–water system: Rapid methane gas storage in hydrates” Oil & Gas Science and Technology–Revue d’IFP Energies nouvelles, volume 74, no.12, 2019.
4. P.S.R.Prasad, B. SaiKiran, K.Sowjanya " Enhanced methane gas storage in the form of hydrates: role of the confined water molecules in silica powders” [RSC Adv.](#) , Volume 10, 2020, Pages 17795-17804. DOI: [10.1039/D0RA01754J](#).
5. B.SaiKiran, K. Sowjanya, P.S.R. Prasad, “Equilibrium conditions of Methane hydrates in sea water from Krishna-Godavari basin, India” Marine Technology society Journal, volume 55, no.2, pages 94-103, 2021.

Conference papers

1. B.Kalyan, B. Saikiran, K.Sowjanya, P.S.R. Prasad, “Rapid Methane Gas Uptake in Tetrahydrofuran Hydrates: Optimization of Solution in Laboratory Scale Reactors for as Storage Application” ,proceedings of ICGH 9
2. P.S.R .Prasad, K. Sowjanya , “Enhanced Methane Gas Storage in Hydrates: Role of the Confined Water Molecules in Silica Powders”,proceedings of ICGH 9
3. I.Radhika, B. Saikiran, K.Sowjanya, P.S.R. Prasad,“[Influence of Sediment Structural Properties and Their Dynamics in the Formation and Dissociation of Methane Hydrates](#)” Materials Today: Proceedings 5 (9), 2018,Pages 17572-17578.

