

SAMANVAYA SINGH GAUR

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Academic Profile

- Currently enrolled in M.S. (thesis) in **Department of Materials Science & Engineering at Texas A&M University, College Station, TX, USA.**
- **Vellore Institute of Technology, Vellore, Tamil Nadu, India.**
Bachelor of Technology in Mechanical with Specialization in Energy Engineering with **CGPA 8.71/10**
Registration Number 15BEM0006
- **S.R. International Academy, Nadbai, Bharatpur, Rajasthan, India**
Class 12th Central Board of Secondary Education: **87.60 % marks in CBSE board exams.**
- **St. Peters Senior Secondary School, Bharatpur, Rajasthan, India**
Class 10th Central Board of Secondary Education scored **GPA 10/10 in CBSE board exams.**

Internships and Research experience

- I attended 10-day International workshop from **20th March to 30th March 2017** on the topic New Methods for the Production and Chemical Manipulation of 2D Nanomaterials and Carbon Nanotubes, under the aegis of GIAN scheme, sponsored by MHRD, Govt. of India at Centre for Nanoscience and Nanotechnology Jamia Millia Islamia (A Central University), Jamia Nagar, New Delhi. In this workshop I learnt about **preparation and characterization Carbon Nanotubes**. This experience was very helpful in gaining the insight of the materials preparation and characterization.
- I have completed six- week research internship from **1st June to 11th July 2017** at Solid State Physics Laboratory, Defence Research and Development Organization (DRDO), New Delhi. During this internship I learnt about how **Cryogenic Laboratory and Liquid Nitrogen Plant** operates based on various thermodynamic properties and their possible applications in defense systems. Furthermore, I explored about the **Graphene production by Low Pressure Chemical Deposition Method (LPCVD)** and its Characterization. This training has immense importance in my research career until now. For this performance, got highest grade- 'S' and 2 credits for **Industrial Internship** from the university.
- Further, I completed another seven-week research internship from **21st May to 6th July 2018** at Indian Institute of Technology Ropar, Punjab, India on effect of stigma in the dragonfly wing and their applications in the **Bio Mimetic Air Vehicles (BMAV)**. I learnt about how dragonfly wings are 3D-printed and what are the different types of materials like acrylonitrile butadiene styrene (ABS) and polylactic acid (PLA) used for the same. This was completely new experience for me as I went on to discover new **aerodynamic concepts** involved during the mimicking of the dragonfly wing. Also, I learnt about the importance of BMAV devices in the military operations.
- I have worked in the field of preparation, characterization and energy applications of polymer nanocomposites from my sophomore year onwards at Nanotechnology Laboratory, VIT, Vellore Headed by Dr. A.N. Grace with collaboration of Hindustan College of science and Technology, Farah (Mathura). The results of this work have been published in **Scopus Journals**.
- I have completed final year undergraduate project on the topic: "Synthesis of Graphene Aerogels and their potential applications in supercapacitors for energy storage".

Technical skills gained

- Preparation of polymer nanocomposites thin film.
- Electrode preparation by high vacuum coating unit.
- Measurement of pyroelectric current and piezoelectric coefficient
- Measurement of thermally stimulated current and transient current in thin film
- Graphene preparation with LPCVD (Low Pressure Chemical Deposition Method) and its characterization.
- Basics of cryocooler and its importance in various military grade devices.
- In depth analysis of the BMAV and its potential applications.
- Synthesis and characterization of graphene aerogels along with electrochemical measurements in supercapacitors.

Membership of professional organization

Lifetime member of Nano and Molecular Society (NMS). Nano and Molecular Society (www.nmsindia.net) is a forum with the goals of fostering scientific research and development in the area of Nanotechnology and Molecular Systems for the benefits of society. The society provides the new platform for sharing and exchange of ideas in multidisciplinary research groups. Life Membership no.: NMS-/2014/LM/078

Academic achievements

- Awarded **Certificate of Merit** by St. Peters Senior Secondary School, Bharatpur, for securing highest marks in class 10th.
- **Research publication:** Effect of BaZrO₃ nanoparticles on pyroelectric properties of Polyvinylidene fluoride (PVDF), Rohan Sagar, Samanvaya Singh Gaur, M. S. Gaur, **Journal of Thermal Analysis and Calorimetry (Springer)**, 2017, Volume 128, Issue 2, pp 1235–1239. (Impact factor: 2.209)
Link: <https://link.springer.com/article/10.1007/s10973-016-5964-y>
- **Research publication:** Enhanced Energy Storage in Polyvinylidenefluoride (PVDF) + BaZrO₃ Electroactive Nanocomposites, Rohan Sagar, Samanvaya Singh Gaur, Andrews Nirmala Grace, M. S. Gaur, **Ionics (Springer)** (Accepted in Jan. 2018), (Impact factor:2.347)
Link: <https://link.springer.com/article/10.1007/s11581-018-2436-3>

Extra-curricular activities

- Member and coordinator of the college student chapter Society of Manufacturing Engineers (SME-VIT) from December 2015 to December 2016.
- During this period, we organized events including two National level workshops in the college campus on the topics such as 3-D Printing. These workshops were managed by our SME team. Experts in the concerned field were called for these highly innovative workshops.
- Other than the academics I've an acumen for acting too. Since my childhood I've participated in various plays in my school and often lead the characters in them. I even bragged some accolades for the same. This was the driving force for choosing dramatics club as my extra-curricular subject in my course curriculum it earned me 2 credits for the coursework.

Hobbies and interests

- Reading novels both fiction and non-fiction. Analyzing whatever I'm reading and implicating the same is one of my favorite hobby.
- Soccer is my favorite sport play as well I enjoy watching FC Barcelona play. I love both watching and playing Cricket. Swimming is also my favorite pastime.
- I am both a philatelist and numismatist. Since my childhood I have been collecting stamps and coins, as a result my collection has become quite diverse.