

# AWARDS, GRANTS & RECOGNITION

- **Associate Editor, IEEE Transaction in Instrumentation and Measurement**, 2025- Present
- **Inspirer Profile**, Royal Society of Chemistry | Particle Characterization Group, 2024 (PCIG Newsletter, Sept 2024, [Page 13-15](#))
- **[San Antonio Museum of Science and Technology](#) Faculty Partner**, National Science Foundation, "Intern R&D at the Science Center", 2024- Present
- **Texas A&M Engineering Experiment Station Annual Research Conference**, 3rd Prize, 2024
- **Outstanding Reviewer Award**, IEEE Transaction in Instrumentation and Measurement, 2022, 2023, 2025
- **Senior Member**, IEEE, 2023
- **US DOE Office of Science**, LEDP Grant, \$135K, 2022
- **Key Scientific Article Award**, 2018 ([Link](#))

# RESEARCH

## Surface Science Engineering

- **Research Focus:** Experimental work on colloidal synthesis and deposition to create hierarchical nanostructures for sensorial applications (photonics, electrical).
- **Key Areas:**
  - Nanoparticle Synthesis with Functionalization: Sonochemistry, Sol-gel, Thermal, Mechanical.
  - Chemical, Mechanical, and Thermal Processing.
  - Thin Film Deposition within Environmental Control Chamber: Bottom-up Processes.
  - Material Characterization: Spectroscopy, Microscopy, Goniometer, FTIR, DLS, IV/CV.
  - Analog and Mixed Signal-based Circuit Design for Sensorial Feasibility.

## Research Awards

- **Key Article Award**, Advances in Engineering: [Scalable Self-Assembly of Nanoparticles for Industrial Applications](#)

## Other Research Interests

- **Collaboration:**
  - **Shear Thickening Nano Filler:** Injury prevention application, seed grant acquired (2024), collaboration with 5 universities.
- **Student-led Research:**
  - Plasma enhanced etching of substrates- Student, Hudson Howie, EE, TAMU, 2025- Present
  - "Nanotechnology Mediated Bee Venom: Applications in Rheumatoid Arthritis (RA)" – 5th International Electronic Conference on Medicinal Chemistry, 2019 (Lydia Smith, Sayantan Das).

## Peer-Reviewed Articles

- "Single-step synthesis of carbon nanotubes-nickel cobaltite (CNT-NiCo<sub>2</sub>O<sub>4</sub>) by thermal decomposition of cyanide compounds for electrochemical sensing applications" *Physica E: Low-dimensional Systems and Nanostructures*, 2024. Link: <https://www.sciencedirect.com/journal/physica-e-low-dimensional-systems-and-nanostructures>
- "Applications of Electrical Impedance Tomography in Neurology". *Basic and Clinical Neuroscience (BCN)*, 2021. Link: <http://bcn.iums.ac.ir/article-1-2010-en.html>
- "Humic Acid Nanosheets Decorated by Tin Oxide Nanoparticles and their Humidity Sensing Behavior". *Sensors and Actuators, B. Chemical*, 2018. Link: <https://doi.org/10.1016/j.snb.2018.10.054>
- "Reduction of defects in colloidal monolayers via surface modifiers and periodic vibration". *Surface and Coatings*, 2017. Link: <https://doi.org/10.1016/j.surfcoat.2017.04.034>
- "Polymer/Clay Nanocomposite Self-Assembly Approach for Gas Barrier Film Applications". *Material Research Society*, 2017. Link: <https://doi.org/10.1557/adv.2017.458>
- "Formation of Periodic Size Segregated Stripe Pattern via Convective Assembly and its Mechanism". *Applied Surface Science*, 2017. Link: <https://doi.org/10.1016/j.apsusc.2017.11.142>
- "The Effect of Amplitude Modulation on the Axial Resolution of Doppler Based Ultrasonic Topography Measurement". *IEEE Transactions*, 2016. Link: <https://doi.org/10.1109/TIM.2016.2600999>
- "Effect of non-zero basic state velocity on spatial instability of an electrically forced axisymmetric jet". *International Journal of Applied Math and Applications*, 3(1), p 49-61, 2011. Link: <http://www.serialsjournals.com/serialjournalmanager/pdf/1329897458.pdf>
- "On temporal instability of electrically forced axisymmetric jets with the variable applied field and non-zero basic state velocity". *Applications and Applied Mathematics: An International Journal*, 6(11), p 1767-1780, 2010. Link: [https://www.pvamu.edu/mathematics/wp-content/uploads/sites/49/03\\_bhatta\\_aam\\_r279\\_db\\_062810\\_vol\\_6\\_issue\\_1.pdf](https://www.pvamu.edu/mathematics/wp-content/uploads/sites/49/03_bhatta_aam_r279_db_062810_vol_6_issue_1.pdf)

### Research Advisor : Student

- Lydia Smith (Presenter) and Sayantan Das (Mentor), "Nanotechnology mediated bee venom: Applications in rheumatoid arthritis (R.A.)". *5th International Electronic Conference on Medicinal Chemistry, Section ECMC-5*, August 2019.

## Non-Peer Reviewed Articles and Presentations

- Invited Speaker: Sayantan Das, "Creation and Control of Hierarchical Structures using Nanomaterials". *Optics Meet* 2021, November 21. Link: <https://www.albedomeetings.com/2021/opticsmeet#speakers>
- Sayantan Das, "Effect of localized mechanical vibration-assisted self-assembly of particles on inherent defects". *American Physical Society*, Texas, 2019. Link: <https://meetings.aps.org/Meeting/TSF19/Session/A01.2>
- Sayantan Das and Javad Gatabi, "Single Transducer Continuous Doppler Ultrasonic Sensors". *American Physical Society*, Texas, 2019. Link: <https://meetings.aps.org/Meeting/TSF19/Session/A01.51>
- Sayantan Das and Gary W. Beall. "Method and Mechanism of Colloidal Assembly for Surface Patterning". *Seventh International Research Conference for Graduate Students*, Texas, 2015.
- Sayantan Das and Gary W. Beall. "Scalable Self Assembly of Colloidal Nanoparticles for Industrial Applications". *Partnership for Research and Education in Materials meeting*, Texas, 2014.
- Javad R. Gatabi, Zahra Rezanejad, Sayantan Das, and M. Soltani, "Rapid Electrolytic Conductivity Measurement Sensor". *P.S. March Meeting*, Denver, 2014.
- Sayantan Das, Dambaru Bhatta, and Daniel N. Riahi. "On Modeling Instabilities of axisymmetric jets". 34th

## PROFESSIONAL AFFILIATION & SERVICE

### **Affiliations:**

- IEEE Senior Member
- Member, Royal Society of Chemistry
- Member, European Colloids and Interface Society
- Member, American Chemical Society

### **Professional Service:**

- Editorial Committee Member, Particle Characterization Interest Group, Royal Society of Chemistry
- Faculty Advisor, Inaugural IEEE Student Branch - Texas A&M-SA IEEE TAMUSA Student Chapter
- Chair of Student Activity, IEEE Region 5: Lone Star Section, USA
- Inaugural Program Coordinator, ESET Program & Physics
- DEIB Committee Member
- Faculty Search Committee Member & Chair
- Faculty Mentor: IEEE, Royal Society of Chemistry
- IEEE Learning Network Reviewer
- Faculty Mentor, Pursuing Resources, Opportunities, Wellness, and Learning Program, TAMU-SA

## TEACHING EXPERIENCE

- Full-time faculty with a course load of 5/5, 5/4, 4/4, and a 50% load during Summer. Taught Physics and Engineering courses.

### **Professional Development:**

- **Electronic Course Development Project – Quality Matters, Texas A&M San Antonio (2020-2021)**
- **The Association of College and University Educators (A.C.U.E.) Course in Effective Teaching Practices (2021-2022)**
- **Energy Technology & Policy Course Certificate (2022)**
- **American Chemical Society (A.C.S.) Reviewer Course Completion Certificate (2021)**

## EDUCATION

- PhD, Material Science Engineering and Commercialization | Texas State University
- MS, Applied Mathematics | University of Texas Rio Grande Valley