

List of publications

2D Materials

1. **A. S. Sarkar***, and E. Stratakis*,
Emerging mixed dimensional heterostructures for photonics and quantum optoelectronics,
2021, Writing in progress, (**Invited Article**)
2. A. Papadopoulos, G. Kourmoulakis, **A. S. Sarkar**, G. Kioseoglou, E. Stratakis,
Robust Photoluminescence in Micro Patterned Coupled SiO₂-Monolayer WS₂,
To be submitted, **2021**.
3. **A. S. Sarkar**[#], A. Kumari[#], Anchala, N. Nakka, B. R. Ray, E. Stratakis and S. K. Pal*,
In-n-plane anisotropic quantum confinement effect in ultrasmall SnS sheet,
Submitted in PRM, **2021**. (**#Equal contribution**)
4. **A. S. Sarkar***, and E. Stratakis*,
Dispersion behaviour of two dimensional monochalcogenides,
Journal of Colloid and Interface Science, **2021**, 594, 334-341.
5. **A. S. Sarkar***, and E. Stratakis*,
Recent advances in two-dimensional metal monochalcogenides,
Advanced Science, **2020**, 7, 2001655. **Editor's choice**.
6. **A. S. Sarkar***, I. Konidakis, I. Demeridou, E. Serpetzoglou, G. Kioseoglou and E. Stratakis*,
Robust B-exciton emission at room temperature in few-layers of MoS₂:Ag nanoheterojunctions embedded into a glass matrix,
Scientific Reports, **2020**, 10, 15697.
7. **A. S. Sarkar**, A. Mushtaq, D. Kushavah and S. K. Pal,
Liquid exfoliation of electronic grade ultrathin tin(II) sulfide (SnS) with intriguing optical response,
npj 2D Materials and Applications, **2020**, 4, 1-9.
8. R. Ray, **A. S. Sarkar**, and S. K. Pal,
Improving Carrier Transport in Polymer Films by Incorporating MoS₂ Nanosheets,
Journal of Physics D: Applied Physics, **2020**, 53, 275109.
9. R. Ray, **A. S. Sarkar**, and S. K. Pal
Improving Performance and Moisture Stability of Perovskite Solar Cells through Interface Engineering with Polymer-2D MoS₂ Nanohybrid
Solar Energy, **2019**, 193, 95-101.
10. **A. S. Sarkar**, A. D. Rao, A. K. Jagdish, A. Gupta, C. K. Nandi, P. C Ramamurthy and S. K. Pal,
Facile embedding of gold nanostructures in the hole transporting layer for efficient polymer solar cells,
Organic Electronics, **2018**, 54, 148-153.
11. **A. S. Sarkar** and S. K. Pal,
Phonon Shift in Chemically Exfoliated WS₂ Nanosheet,

- AIP Conf. Proc.*, **2018**, 1942, 090046.
12. **A. S. Sarkar** and S. K. Pal,
A van der Waals p-n Heterojunction based on Polymer-2D Layered MoS₂ for Solution Processable Electronics,
Journal of Physical Chemistry C, **2017**, *121*, 21945-21954.
 13. A. Mushtaq, S. Ghosh, **A. S. Sarkar** and S. K. Pal,
Multiple Exciton Harvesting at Zero-Dimensional/Two-Dimensional Heterostructures,
ACS Energy Letters, **2017**, *2*, 1879-1885.
 14. **A. S. Sarkar** and S. K. Pal
Electron-Phonon Interaction in Organic/2D-Transition Metal Dichalcogenide Heterojunctions: A Temperature Dependent Raman Spectroscopic Study,
ACS Omega, **2017**, *2*, 4333-4340.
 15. **A. S. Sarkar** and S. K. Pal,
Exponentially Distributed Trap-Controlled Space Charge Limited Conduction in Graphene Oxide Films,
Journal of Physics D: Applied Physics, **2015**, *48*, 445501.

Others

16. Q. Shi*, S. Ghosh*, **A. S. Sarkar**, P. Kumar, Z. Wang, S. K. Pal, T. Pullerits, and K. J. Karki
Variation in the Photocurrent Response due to Different Emissive States in Methylammonium Lead Bromide Perovskites,
Journal of Physical Chemistry C, **2018**, *122*, 3818-3823. (***Equal contributions**)
17. S. Ghosh, M. Ghosh, P. Kumar, **A. S. Sarkar**, S. K. Pal, *Quenching of the Excitonic Emission of ZnO Quantum Dots Due to Auger-Assisted Hole Transfer to CdS Quantum Dots*,
Journal of Physical Chemistry C, **2016**, *120*, 27717-27723.
18. **A. S. Sarkar**, V. Kalyani, K. E. Gonsalves, C. P. Pradeep and S. K. Pal,
Ion mediated Charge Carrier Transport in a Novel Radiation Sensitive Polyoxometalate-Polymer Hybrid,
RSC Advances, **2016**, *6*, 44838. (**Communication**)
19. V. Kalyani, V. S. V. Satyanarayana, **A. S. Sarkar**, A. Kumar, S. K. Pal, S. Ghosh, K. E.
Radiation Sensitive Hybrid Polymer Based on Mn-Anderson Polyoxometalate Cluster and a UV Active Organic Monomer: Synergistic Effects Lead to Improved Photocurrent in Photoresponse Device,
RSC Advances, **2015**, *5*, 36727-36731. (**Communication**)