

List of Publications

A. List of publications related to Thesis

1. Narayan N. Som, Venu H. Mankad and Prafulla K. Jha, Hydrogen evolution reaction: The role of arsenene nanosheet and dopant, International Journal of Hydrogen Energy, (2018). <https://doi.org/10.1016/j.ijhydene.2018.03.066>
2. Narayan N Som, Prafulla K Jha, Hydrogen evolution reaction of metal di-chalcogenides: ZrS₂, ZrSe₂ and Janus ZrSSe, International Journal of Hydrogen Energy (2019). <https://doi.org/10.1016/j.ijhydene.2019.09.033>
3. Narayan N. Som, Basant Roondhe, Vaishali Sharma and Prafulla K. Jha, First Principles Study of the Structural and Electronic Properties of Hetero-Structure Silicene/SnSe₂: Using Lattice Match Model, AIP Conference Proceedings, 2115 (1), 030367 (2019). <https://doi.org/10.1063/1.5113206>
4. Sharad Babu Pillai, Shweta D. Dabhi, Som Narayan and Prafulla K. Jha, Strain effect on electronic and lattice dynamical behaviour of two dimensional Bi, BiAs and BiSb, AIP Conference Proceedings, 1942, 090022, (2018). <https://doi.org/10.1063/1.5028937>
5. Narayan N. Som, PMWP Sampath, Shweta D. Dabhi, Venu Mankad, Satyam Shinde, MLC Attygalle, Prafulla K. Jha, Strain and layer modulated electronic and optical properties of low dimensional perovskite methylammonium lead iodide: Implications to solar cells, Solar Energy, 173, 1315-1322 (2018). <https://doi.org/10.1016/j.solener.2018.06.052>

B. List of publications not related to Thesis

1. Vaishali Sharma, Narayan N Som, Sharad Babu Pillai, Prafulla K Jha, Utilization of doped GQDs for ultrasensitive detection of catastrophic melamine: A new SERS platform, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 224, 117352 (2020). <https://doi.org/10.1016/j.saa.2019.117352>
2. Narayan N Som, Vaishali Sharma, Venu Mankad, MLC Attygalle, Prafulla K Jha, Role of CuAlO₂ as an absorber layer for solar energy converter, Solar Energy 193, 799 (2019). <https://doi.org/10.1016/j.solener.2019.09.098>
3. Khushbu Patel, Bhumi A Baraiya, Narayan N Som, Basant Roondhe, Prafulla K Jha, Investigating hydrogen evolution reaction properties of a new honeycomb 2D AlC, International Journal of Hydrogen Energy (2019). <https://doi.org/10.1016/j.ijhydene.2019.10.131>
4. Archana N. Inamdar, Narayan N. Som, Arun Pratap, Prafulla K. Jha, Hydrogen evolution and oxygen evolution reactions of pristine and alkali metal doped SnSe₂ monolayer, International Journal of Hydrogen Energy (2019). <https://doi.org/10.1016/j.ijhydene.2019.07.093>

5. Vaishali Sharma, Som narayan, Shweta D. Dabhi, Satyam Shinde and Prafulla K. Jha, Sensing Behavior of a Graphene Quantum Dot Phenalenyl Towards Toxic Gases, AIP Conference Proceedings, 1942, 050047, (2018). <https://doi.org/10.1063/1.5028678>
6. Pratik M. Pataniya, Chetan K. Zankat, Mohit Tannarana, Abhishek Patel, Som Narayan, G. K. Solanki, K. D. Patel, Prafulla K. Jha, V. M. Pathak, Photovoltaic activity of WSe₂/Si hetero junction, Materials Research Bulletin, 120, 110602 (2019). <https://doi.org/10.1016/j.materresbull.2019.110602>
7. Vijay Dixit, Salil Nair, Jolly Joy, CU Vyas, Alkesh B Patel, Payal Chauhan, CK Sumesh, Som Narayan, Prafulla K Jha, GK Solanki, KD Patel, VM Pathak, Growth and application of WSe₂ single crystal synthesized by DVT in thin film hetero-junction photodetector, *Eur. Phys. J. B.*, **92** (6), 118 (2019). <https://doi.org/10.1140/epjb/e2019-90736-3>
8. Payal Chauhan, GK Solanki, Alkesh B Patel, Kunjal Patel, Pratik Pataniya, Som Narayan, KD Patel, Prafulla K Jha, V. M Pathak, Tunable and anisotropic photoresponse of layered Re_{0.2}Sn_{0.8}Se₂ ternary alloy, Solar Energy Materials & Solar Cells, 200, 109936 (2019). <https://doi.org/10.1016/j.solmat.2019.109936>
9. Hardik L. Kagdada, Hiral J. Trivedi, Sharad B. Pillai, Narayan N. Som, Prafulla K. Jha Structural, Electronic and Dynamical Properties of Binary Alloy Zr-Al Using Density Functional Theory, Advanced Materials Research 1141, 204 (2016). <https://doi.org/10.4028/www.scientific.net/AMR.1141.204>
10. Pratik Pataniya, Chetan K. Zankat, Mohit Tannarana, C. K. Sumesh, Som Narayan, G. K. Solanki, K. D. Patel, V. M. Pathak, and Prafulla K. Jha, Paper-Based Flexible Photodetector Functionalized by WSe₂ Nanodots, ACS Applied Nano Materials, 2, 2758-2766 (2019). <https://doi.org/10.1021/acsanm.9b00266>
11. Vijay Dixit, Payal Chauhan, Alkesh B Patel, Prafulla K Jha, GK Solanki, KD Patel, VM Pathak, Som Narayan, Growth and application of Sb_{0.5}Mo_{0.5}Se₂ ternary alloy as photodetector, Materials Letters: X, 2, 100013, (2019). <https://doi.org/10.1016/j.mlblux.2019.100013>
12. Alkesh Patel, Hiren K. Machhi, Payal Chauhan, Som Narayan, Vijay Dixit, Saurabh S. Soni, Prafulla K Jha, Gunvant Solanki, Kireetkumar Patel, Vivek Pathak, Electrophoretically Deposited MoSe₂/WSe₂ Heterojunction from Ultrasonically Exfoliated Nanocrystals for Enhanced Electrochemical Photoresponse, ACS applied materials & interfaces, 11, 4093-4102, (2019). <https://doi.org/10.1021/acsami.8b18177>
13. Ravi Vithalani, Dikin Patel, Chetan K. Modi, Narayan N. Som, Prafulla K. Jha, S. R. Kane, Enhancing the potency of surface hydroxyl groups of graphene oxide for selective oxidation of benzyl alcohol, Diamond and Related Materials, 90, 154-165 (2018). <https://doi.org/10.1016/j.diamond.2018.10.015>
14. Sharad Babu Pillai, Som Narayan, Prafulla K Jha, Strain induced changes in phonon band structure of antimony monolayer using density functional theory calculations AIP Conference Proceedings 1832, 090046, (2017). <https://doi.org/10.1063/1.4980599>

15. Vaishali Sharma, Narayan Som, Shweta D. Dabhi and Prafulla K. Jha, Tailoring the Electronic and Magnetic Properties of Peculiar Triplet Ground State Polybenzoid “Triangulene”, ChemistrySelect, 3, 2390-2397, (2018).
<https://doi.org/10.1002/slct.201703054>
16. C. K. Modi, R. S. Vithalani, D. S. Patel, Narayan N. Som and Prafulla K. Jha, Zeolite-Y entrapped metallo-pyrazolone complexes as heterogeneous catalysts: Synthesis, catalytic aptitude and computational investigation, Microporous and Mesoporous Materials, 261, 275-285, (2018). <https://doi.org/10.1016/j.micromeso.2017.10.043>
17. Chetan K. Zankat, Pratik Pataniya, G. K. Solanki, K. D. Patel, V. M. Pathak, Narayan Som and Prafulla K. Jha, Investigation of morphological and structural properties of V incorporated SnSe₂ single crystals, Materials Science in Semiconductor Processing, 80, 137-142, (2018). <https://doi.org/10.1016/j.mssp.2018.02.023>
18. Abhishek Patel, Pratik Pataniya, Som Narayan, C. K. Sumesh, V. M. Pathak, G. K. Solanki, K. D. Patel and Prafulla K. Jha, Investigation of structural, electrical and optical properties of SbXW₁-XSe₂ single crystals, Materials Science in Semiconductor Processing, 81, 108-112, (2018). <https://doi.org/10.1016/j.mssp.2018.03.020>
19. Narayan N. Som, Venu Mankad, Shweta D Dabhi, Anjali Patel and Prafulla K Jha, Magnetic behavior study of samarium nitride using density functional theory, Journal of Magnetism and Magnetic Materials, 448, 186-191, (2018).
<https://doi.org/10.1016/j.jmmm.2017.10.019>
20. Basant Roondhe, Deepak Upadhyay, Narayan Som, Sharad B. Pillai, Satyam Shinde and Prafulla K. Jha, Structural, Electronic and Dynamical Properties of Curium Monopnictides: Density Functional Calculations, Journal of Electronic Materials, 46, 1842–1848 (2017). <https://doi.org/10.1007/s11664-016-5247-1>
21. Showkat H. Mir, Sudip Chakraborty, John Wärnå, Som Narayan, Prakash C. Jha, Prafulla K. Jha and Rajeev Ahuja, A comparative study of hydrogen evolution reaction on pseudo-monolayer WS₂ and PtS₂: insights based on the density functional theory. Catal. Sci. Technol. 7, 687-692 (2017). <https://doi.org/10.1039/C7TA04889K>
22. Showkat H. Mir, Sharad B. Pillai, Narayan N. Som, Prakash C. Jha, Prafulla K. Jha, First Principles Study of Electronic, Lattice Dynamic, and Thermal Properties of Single Layer Phosphorene, Advanced Materials Research 1141, 210-214 (2016).
<https://doi.org/10.4028/www.scientific.net/AMR.1141.210>