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3. **Department and Institution** Department of Physics, Indian Institute of Technology Patna

4. **Date of Birth** September 28, 1977

5. **Gender** Male

6. **Category** General

7. **Whether differently abled** No

8. **Academic Qualification (UG onward)**

	Degree	Year	Subject	University/Institution	% of marks
(i)	B.Sc.	1998	Physics (Major), Mathematics and Chemistry (Subsidiary) and Electronic Instrumentation (Applied component)	Birla College of Arts Science and Commerce, University of Mumbai	74.25
(ii)	M.Sc.	2000	Physics	Indian Institute of Technology Mumbai	7.75 on a 10 point scale
(iii)	Ph.D.	2007	Physics	DCMP&MS, TIFR (Mumbai)	Not applicable

9. **Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award:**

Thesis title:	Effect of Pinning and Driving Force on the Phase Transformations in the Weakly Pinned Vortex Matter in Conventional Superconductors
Adviser(s):	Prof. A. K. Grover and Prof. S. Ramakrishnan
Institution:	Tata Institute of Fundamental Research (TIFR), Mumbai
Year of award:	2007

10. **Work experience (in chronological order):**

Sl	Positions held	Name of the Institute	From	To
A	NIMS Post-Doctoral Researcher	NIMS, Tsukuba	February 19, 2007	March 31, 2010
B	Visiting Fellow	TIFR, Mumbai	May 2010	July 2010
C	Research Associate	IIT Mumbai	July 2010	December 2011
D	Assistant Professor	IIT Patna	December 2011	December 2019
G	Associate Professor	IIT Patna	December 2019	present

11. **Expertise and Skills**: Sustainable functional material and technology, Energy Materials, Bottom-Up nanostructuring, Low Temperature Techniques, Sub-microfabrication Techniques

12. **Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant:**

Sl	Name of Award	Awarding Agency	Year
1	Certificate of Merit for top 0.1% in Science	CBSE	1993
2	Gold Medal in National Graduate Physics Examination	IAPT	1997
3	TIFR Graduate School Fellowship	DAE	2000-06
4	Kanwal Rekhi Fellowship	Kanwal Rekhi Foundation	2003-05
5	Post-Doctoral Fellowship	NIMS	2007-2010

6	Outstanding Reviewer Award	Elsevier	2014
7	Best UG Teacher (Physics) Award	IIT Patna	2017, 2018

14. Patent Details:

Sl	Patent Title	Patent Status	Country	Name of Inventor	Patent Number
1	System and Method for He at Recovery in Gasification Process	Granted	India	Sunil, R. Raj, Ajay D. Thakur, B. K. Rajan, B. Chaitanya, R. Sinha, A. Agarwal, A.Agarwal	390902 (**Issue Date**: 01/03/2022, **Application No.**: 201831011600, **Priority Date**: 28/03/2018)
2	System and Method for Ext racting Atmospheric Moist ure	Granted	India	Abhash Shukla, Sunil, R. Raj, Ajay D. Thakur	496332 (**Issue Date**: 09/01/2024, **Application No.**: 202331035489, **Priority Date**: 22/05/2023)
3	An Apparatus and Method for Off-the-Grid Climate C ontrol	Granted	India	Sunil, R. Sinha, Ajay D. Thakur, R. Raj, A. Shukla, A. Agarwal	519459 (**Issue Date**: 05/03/2024, **Application No.**: 202231026031, **Priority Date**: 04/05/2022)
4	Method for Developing Tu nable Wettability Surfaces	Published	India	Abhash Shukla, Avinash Upadhyay, Rishi Raj, Ajay D. Thakur	**Application No.**: 202531005502, **Priority Date**: 23/01/2025

15. Publications (List of papers in SCI Journals, in year wise descending order):

1. Kumar, A., Thakur, A. D., Polymer Engineering & Science Enhanced Strength and Thermal Stability in Nacre-Inspired Polyvinyl Alcohol/Graphene Oxide Composites via Biomass Gasification–Derived Carbon Nanomaterials (2025); https://doi.org/10.1002/pen.70141.
2. Pandey, K. D., Kamble, Y., Thakur, A., Thakur, A. D., An image-guided untethered approach for in-situ force measurement using non-prehensile deformation of hydrogel, Sensors and Actuators A: Physical 395, 116995 (2025).
3. Pandey, K. D., Maity, I., Thakur, A. D. (2025). Halloysite nanotube modified piezo-electric hydrogel with multifunctional properties, Sensors and Actuators A; Physical 386, 116320. https://doi.org/10.1016/j.sna.2025.116320
4. Maity, I., Bharti, R., Mukherjee, A. K., & Thakur, A. D. (2025). Demonstration of asymmetric Hebbian learning based on analog resistive switching in Ag/Co3O4/p-Si memristor. *Applied Physics Letters, 126*(1), 013504. https://doi.org/10.1063/5.0235922
5. Pandya, A., Anadkat, D., Dungani, S., Thakur, A. D., & Sanchela, A. V. (2025). Enhanced thermal sensitivity of graphite paint-based flexible thermocouple. *Journal of Electronic Materials, 54*(1), 440-450. https://doi.org/10.1007/s11664-024-11598-5
6. Sinha, R., Thakur, A. D., & Raj, R. (2024). Investigating drying behavior and quality of Neem leaves using a novel biomass gasification-powered climate control unit with built-in humidity control. *International Communications in Heat and Mass Transfer, 158*, 107888. https://doi.org/10.1016/j.icheatmasstransfer.2024.107888
7. Sinha, R., Agarwal, A., Thakur, A. D., & Raj, R. (2024). Design, fabrication, and performance assessment of a novel biomass gasification-powered all-season climate control unit for perishables. *Biomass and Bioenergy, 183*, 107161. https://doi.org/10.1016/j.biombioe.2024.107161
8. Shukla, A., Thakur, A. D., & Raj, R. (2024). Experiment and modeling of an improvised atmospheric water harvester for arid and semi-arid conditions. *Applied Thermal Engineering, 242*, 122486. https://doi.org/10.1016/j.applthermaleng.2024.122486
9. Maity, I., Mukherjee, A. K., & Thakur, A. D. (2024). Improvement in the resistive switching performance of LaMnO3 by dendritic Cu2S. *Journal of Materials Science: Materials in Electronics, 35*, 146. https://doi.org/10.1007/s10854-023-11852-2
10. Sunil, Agarwal, A., Thakur, A. D., & Raj, R. (2024). Demonstration of long-term cyclic sorption of ammonia in modified expanded graphite-calcium chloride composites for practical applications. *International Communications in Heat and Mass Transfer, 150*, 107206.
11. Agarwal, D., Kamble, Y., Raj, A., Thakur, A. D., & Thakur, A. (2023). Biomechanical parameter estimation using untethered nonprehensile magnetic microrobot. *Journal of Micro and Bio Robotics, 19*, 59. https://doi.org/10.1007/s12213-023-00164-7
12. Agarwal, D., Thakur, A. D., & Thakur, A. (2023). Magnetic microbot-based micromanipulation of surrogate biological objects in fluidic channels. *Journal of Micro-Bio Robotics, 19*, 21. https://doi.org/10.1007/s12213-022-00151-4
13. Maity, I., Mukherjee, A. K., & Thakur, A. D. (2023). Enhanced stability and low operational voltage of resistive switching behavior in defect engineered LaMnO3 film. *Applied Physics A, 129*, 11. https://doi.org/10.1007/s00339-022-06265-7
14. Shukla, M., & Thakur, A. D. (2022). An enquiry on similarities between renormalization group and auto-encoders using transfer learning. *Physica A: Statistical Mechanics and its Applications, 608*, 128276. https://doi.org/10.1016/j.physa.2022.128276

15. Kumari, K., Thakur, A. D., & Ray, S. J. (2022). Structural, resistive switching and charge transport behaviour of (1-x)LaSrMnO.(x)ZnO composite system. *Applied Physics A, 128*(11), 992. https://doi.org/10.1007/s00339-022-06084-w
16. Kumari, K., Ray, S. J., & Thakur, A. D. (2022). Resistive switching phenomena: A probe for the tracing of secondary phase in manganite. *Applied Physics A, 128*(5), 430. https://doi.org/10.1007/s00339-022-05553-6
17. Kumari, K., Kar, S., & Thakur, A. D., & Ray, S. J. (2022). Role of an oxide interface in a resistive switch. *Current Applied Physics, 35*, 16. https://doi.org/10.1016/j.cap.2021.10.006
18. Chaitanya, B., Gunjan, M. R., Sarangi, R., Raj, R., & Thakur, A. D. (2022). Per-fluorinated chemical free robust superhydrophobic copper surface using a scalable technique. *Materials Chemistry and Physics, 278*, 125667. https://doi.org/10.1016/j.matchemphys.2021.125667
19. Agarwal, D., Thakur, A. D., & Thakur, A. (2022). A feedback-based manoeuvre planner for nonprehensile magnetic micromanipulation of large microscopic biological objects. *Robotics and Autonomous Systems, 148*, 103941. https://doi.org/10.1016/j.robot.2021.103941
20. Sanchela, A. V., Thakur, A. D., & Tomy, C. V. (2022). Direction-dependent thermoelectric properties of a layered compound In2Te5 single crystal. *Journal of Electronic Materials*. https://doi.org/10.1007/s11664-022-09487-w
21. Kumari, K., Majumder, S., Thakur, A. D., & Ray, S. J. (2021). Temperature-dependent resistive switching behaviour of an oxide memristor. *Materials Letters, 303*, 130451.
22. Sinha, A., Ranjan, P., & Thakur, A. D. (2021). Effect of characterization probes on the properties of graphene oxide and reduced graphene oxide. *Applied Physics A, 127*, 585.
23. Kumar, A., & Thakur, A. D. (2021). Impurity photovoltaic and split spectrum for efficiency gain in Cu2ZnSnS4 solar cells. *Optik, 238*, 166783.
24. Kumari, K., Kumar, A., Thakur, A. D., & Ray, S. J. (2021). Charge transport and resistive switching in a 2D hybrid interface. *Materials Research Bulletin, 139*, 111195.
25. Sinha, A., Ranjan, P., Ali, A., Balakrishnan, J., & Thakur, A. D. (2021). Graphene oxide and its derivatives as potential Ovchinnikov ferromagnets. *Journal of Physics: Condensed Matter, 33*, 375801.
26. Kumar, A., Sivaprahasam, D., & Thakur, A. D. (2021). Improved thermoelectric properties in (1-x) LaCoO3/(x) La0.7Sr0.3CoO3 composite. *Materials Chemistry and Physics, 269*, 124750. https://doi.org/10.1016/j.matchemphys.2021.124750
27. Kumari, K., Thakur, A. D., & Ray, S. J. (2021). The effect of graphene and reduced graphene oxide on the resistive switching behavior of La0.7Ba0.3MnO3. *Materials Today Communications, 26*, 102040. https://doi.org/10.1016/j.mtcomm.2021.102040
28. Kumar, A., Sivaprahasam, D., & Thakur, A. D. (2021). Colossal Seebeck coefficient in Aurivillius phase-perovskite oxide composite. *Journal of Alloys and Compounds, 853*, 157001. https://doi.org/10.1016/j.jallcom.2020.157001
29. Kumar, A., Kumari, K., Ray, S. J., & Thakur, A. D. (2020). Graphene mediated resistive switching and thermoelectric behavior in lanthanum cobaltate. *Journal of Applied Physics, 127*(23), 235103. https://doi.org/10.1063/5.0009666
30. Kumari, K., Kumar, A., Kotnees, D. K., Balakrishnan, J., Thakur, A. D., & Ray, S. (2020). Structural and resistive switching behaviour in Lanthanum strontium manganite-Reduced graphene oxide nanocomposite system. *Journal of Alloys and Compounds, 815*, 152213. https://doi.org/10.1016/j.jallcom.2019.152213
31. Sunil, Sinha, R., Bathina, C., Rajan, B. K., Agarwal, A., Thakur, A. D., & Raj, R. (2019). Design, fabrication, and performance evaluation of a novel biomass-gasification-based hot water generation system. *Energy, 185*, 148-157. https://doi.org/10.1016/j.energy.2019.06.186
32. Kumar, A., & Thakur, A. D. (2019). Comprehensive loss modeling in Cu2SnZnS4 solar cells. *Current Applied Physics, 19*, 1111-1119. https://doi.org/10.1016/j.cap.2019.07.005
33. Kumar, A., & Thakur, A. D. (2019). Improving the optoelectrical properties of Cu2ZnSnS4 using gold and graphene nanofillers. *Journal of Materials Science: Materials in Electronics, 20*, 8546-8554. https://doi.org/10.1007/s10854-019-01175-6.
34. Ranjan, P., Verma, P., Agarwal, S., Rao, T. R., Samanta, S. K., & Thakur, A. D. (2019). Inducing dye-selectivity in graphene oxide for cationic dye separation applications. *Materials Chemistry and Physics, 226*, 350. https://doi.org/10.1016/j.matchemphys.2019.01.047.
35. Kumar, A., Kumari, K., Jayachandran, B., Sivaprahasam, D., & Thakur, A. D. (2019). Thermoelectric properties of (1-x)LaCoO3.(x)La0.95Sr0.05CoO3 composite. *Materials Research Express, 6*, 055502. https://doi.org/10.1016/j.jallcom.2018.03.347.
36. Ranjan, P., Agarwal, S., Sinha, A., Rao, T. R., Balakrishnan, J., & Thakur, A. D. (2018). A low-cost non-explosive synthesis of graphene oxide for scalable applications. *Scientific Reports, 8*, 12007. https://doi.org/10.1038/s41598-018-30613-4.
37. Chaitanya, B., Bahadur, V., Thakur, A. D., & Raj, R. (2018). Biomass-gasification-based atmospheric water harvesting in India. *Energy, 165*, 610-621. https://doi.org/10.1016/j.energy.2018.09.183.

38. Ranjan, P., Tiwary, P., Chakraborty, A. K., Mahapatra, R., & Thakur, A. D. (2018). Graphene oxide based free-standing films for humidity and hydrogen peroxide sensing. *Journal of Materials Science: Materials in Electronics, 25*, 15946-15956. https://doi.org/10.1007/s10854-018-9680-1.
39. Kumar, A., Tomy, C. V., & Thakur, A. D. (2018). Magnetothermopower, magnetoresistance and magnetothermal conductivity in La0.95Sr0.05Co1-xMnxO3 (0.00 ≤ x ≤ 1.00). *Materials Research Express, 5*, 086110. https://doi.org/10.1088/2053-1591/aad44c.
40. Kumar, A., & Thakur, A. D. (2018). Role of contact work function, back surface field, and conduction band offset in Cu2ZnSnS4 solar cell. *Japanese Journal of Applied Physics, 57*(8S3), 08RC05. https://doi.org/10.7567/JJAP.57.08RC05.
41. Kumar, A., Kumari, K., Jayachandran, B., Sivaprahasam, D., & Thakur, A. D. (2018). Thermoelectric properties of (1-x) LaCoO3. xLa0.7Sr0.3MnO3 composite. *Journal of Alloys and Compounds, 735*, 1787-1791. https://doi.org/10.1016/j.jallcom.2017.11.334.
42. Kumar, A., Sivaprahasam, D., & Thakur, A. D. (2018). Improvement of thermoelectric properties of lanthanum cobaltate by Sr and Mn co-substitution. *Journal of Alloys and Compounds, 735*, 1787-1791. https://doi.org/10.1016/j.jallcom.2017.11.334.
43. Sanchela, A.V., Thakur, A. D., & Tomy, C. V. (2016). Improvement in thermoelectric properties by tailoring at In and Te site in In2Te5. *Journal of Electronic Materials, 45*(11), 5540-5545. https://doi.org/10.1007/s11664-016-4778-9.
44. Sanchela, A. V., Tomy, C. V., & Thakur, A. D. (2015). Effect of Sb deficiency on the thermoelectric properties of Zn4Sb3. *Solid State Communications, 218*, 49. https://doi.org/10.1016/j.ssc.2015.06.012.
45. Yadav, A. K., Sharma, H., Thakur, A. D., & Tomy, C. V. (2015). Growth and angular dependent resistivity of Nb2Pd0.73S5.7 in superconducting single crystal fibers. *Materials Chemistry and Physics, 164*, 46. https://doi.org/10.1016/j.matchemphys.2015.08.019.
46. Yadav, A. K., Sanchela, A. V., Thakur, A. D., & Tomy, C. V. (2015). Effect of nominal substitution of transition metals for excess Fe in Fe1+xSe superconductor. *Solid State Communications, 202*, 8. https://doi.org/10.1016/j.ssc.2014.10.027.
47. Sanchela, A. V., Thakur, A. D., & Tomy, C. V. (2015). Enhancement in thermoelectric properties of FeSb2 by Sb site deficiency. *Journal of Materiomics, 1*, 205. https://doi.org/10.1016/j.jmat.2015.04.005.
48. Yadav, A. K., Thakur, A. D., & Tomy, C. V. (2013). Growth, characterization, vortex pinning, and vortex flow properties of single crystals of the iron chalcogenide superconductor FeCr0.02Se. *Physical Review B, 87*, 174524. https://doi.org/10.1103/PhysRevB.87.174524.
49. Hirata, K., Thakur, A. D., & Ooi, S. (2013). Vortex states in superconducting nanowires. *Physica C, 493*, 47. https://doi.org/10.1016/j.physc.2013.03.019.
50. Hirata, K., Thakur, A. D., Ooi, S., & Mochiku, T. (2012). Vortices in superconducting nano-networks with antidot arrays. *Central European Journal of Physics, 10*, 576. https://doi.org/10.2478/s11534-012-0041-z.
51. Das, P., Thakur, A. D., Yadav, A. K., Tomy, C. V., Lees, M. R., Balakrishnan, G., Ramakrishnan, S., & Grover, A. K. (2011). Magnetization hysteresis and time decay measurements in FeSe0.5Te0.5: Evidence for fluctuation in mean free path induced pinning. *Physical Review B, 84*, 214526. https://doi.org/10.1103/PhysRevB.87.174524.
52. Yadav, A. K., Thakur, A. D., & Tomy, C. V. (2011). Enhanced superconducting properties in FeCrxSe. *Solid State Communications, 151*, 557. https://doi.org/10.1016/j.ssc.2011.01.010.
53. Machida, T., Kato, T., Nakamura, H., Fujimoto, M., Mochiku, T., Ooi, S., Thakur, A. D., Sakata, H., & Hirata, K. (2011). Quantum interference of impurity bound states in Bi2Sr2Ca(Cu1−xZnx)2O8+δ probed by scanning tunneling spectroscopy. *Physical Review B, 84*, 064501. https://doi.org/10.1103/PhysRevB.84.064501.
54. Machida, T., Kato, T., Nakamura, H., Fujimoto, M., Mochiku, T., Ooi, S., Thakur, A. D., Sakata, H., & Hirata, K. (2010). Disappearance of zinc impurity resonance in large-gap regions of Bi2Sr2CaCu2O8+δ probed by scanning tunneling spectroscopy. *Physical Review B, 82*, 180507. https://doi.org/10.1103/PhysRevB.82.180507.
55. Thakur, A. D., Ooi, S., & Hirata, K. (2009). Triangular antidot array to honeycomb wire network-Role of interstitial vortices. *Physica C, 469*, 1071. https://doi.org/10.1016/j.physc.2009.05.157.
56. Thakur, A. D., Ooi, S., Chockalingam, S. P., Jesudasan, J., Raychaudhuri, P., & Hirata, K. (2009). Vortex matching effect in engineered thin films of NbN. *Applied Physics Letters, 94*, 262501. https://doi.org/10.1063/1.3167771.
57. Sheet, G., Gautam, U. K., Thakur, A. D., Hirata, K., Bando, Y., & Nakayama, T. (2009). Clean superconducting In nanowires encapsulated within insulating ZnS nanotubes. *Applied Physics Letters, 94*, 053108. https://doi.org/10.1063/1.3072359.
58. Kasahara, S., Fujii, H., Takeya, H., Mochiku, T., Thakur, A. D., & Hirata, K. (2008). Low temperature specific heat of superconducting ternary intermetallics La3Pd4Ge4, La3Ni4Si4, and La3Ni4Ge4 with U3Ni4Si4 type structure. *Journal of Physics: Condensed Matter, 20*, 385204. https://doi.org/10.1088/0953-8984/20/38/385204.

59. Thakur, A. D., Pal, D., Higgins, M. J., Ramakrishnan, S., & Grover, A. K. (2007). Scan rate dependence of magnetization hysteresis in weakly pinned crystals of 2H-NbSe2 and Ca3Rh4Sn13: A vibrating sample magnetometer study. *Physica C, 466*, 181. https://doi.org/10.1016/j.physc.2007.07.009.
60. Sarkar, S., Thakur, A. D., Tomy, C. V., Balakrishnan, G., Paul, D. M., Ramakrishnan, S., & Grover, A. K. (2006). Critical points in the Bragg glass phase of a weakly pinned crystal of Ca3Rh4Sn13. *Pramana - Journal of Physics, 66*, 193. https://doi.org/10.1007/BF02704947.
61. Thakur, A. D., Banerjee, S. S., Higgins, M. J., Ramakrishnan, S., & Grover, A. K. (2006). Effect of pinning and driving force on the metastability effects in weakly pinned superconductors and the determination of spinodal line pertaining to order-disorder transition. *Pramana - Journal of Physics, 66*, 159. https://doi.org/10.1007/BF02704945.
62. Sarkar, S., Tomy, C. V., Thakur, A. D., Balakrishnan, G., Paul, D. M., Ramakrishnan, S., & Grover, A. K. (2006). Pulverization of the flux line lattice, the phase coexistence and the spinodal temperature of the order-disorder transition in a weakly pinned crystal of Yb3Rh4Sn13. *Pramana - Journal of Physics, 66*, 179. https://doi.org/10.1007/BF02704946.
63. Jaiswal Nagar, D., Thakur, A. D., Ramakrishnan, S., Grover, A. K., Pal, D., & Takeya, H. (2006). Flux jumps, second magnetization peak anomaly and the peak effect phenomena in single crystals of YNi2B2C and LuNi2B2C. *Physical Review B, 74*, 184514. https://doi.org/10.1103/PhysRevB.74.184514.
64. Thakur, A. D., Chandrasekhar Rao, T. V., Uji, S., Terashima, T., Higgins, M. J., Ramakrishnan, S., & Grover, A. K. (2006). Evolution in the split-peak structure across the Peak Effect region in single crystals of 2H-NbSe2. *Journal of the Physical Society of Japan, 75*, 074718. https://doi.org/10.1143/JPSJ.75.074718.
65. Thakur, A. D., Banerjee, S. S., Higgins, M. J., Ramakrishnan, S., & Grover, A. K. (2005). Exploring metastability via the third harmonic measurements in single crystals of 2H-NbSe2 showing anomalous Peak effect. *Physical Review B, 72*, 134524. https://doi.org/10.1103/PhysRevB.72.134524.
66. Wanchoo, S. K., Jesudasan, J., Bagwe, V. C., Thakur, A. D., Vaishnav, U. D., Pai, S. P., Narsale, A. M., & Pinto, R. (2003). Synthesis of good quality LCMO/YBCO heterostructures by pulsed laser deposition technique. *Nuclear Instruments and Methods in Physics Research B, 212*, 539. https://doi.org/10.1016/S0168-583X(03)01841-X

Peer Reviewed Publications in Conferences (Indian and International)

1. Pandey, K. D., Kamble, Y. D., Thakur, A., & Thakur, A. D. (2024). Evaluation of Elastic Modulus of Hydrogel as a Function of Water Content. Proceedings of the 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference December 14-17, 2023, IIT Patna, Patna-801106, Bihar, India. Begel House Inc.
2. Pandya, A., Anadkat, D., Dungani, S., Thakur, A. D., & Sanchela, A. V. (2024). Fabrication and Characterization of Flexible Graphite-Copper Based Thermoelectric Devices. Proceedings of the 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference December 14-17, 2023, IIT Patna, Patna-801106, Bihar, India. Begel House Inc.
3. Maity, I., Bharti, R., Mukherjee, A. K., & Thakur, A. D. (2024). Exploring the Potential of Thermal Avalanche in Resistive Switching Memory. Proceedings of the 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference December 14-17, 2023, IIT Patna, Patna-801106, Bihar, India. Begel House Inc.
4. Kumar, A., Kumar, N., Ranjan, P., & Thakur, A. D. (2022). Electrical and Optical Characterisation of CZTS Thin-Film for Sensing Applications. 2022 Advances in Science and Engineering Technology International Conferences (ASET), pp. 1–4. IEEE.
5. Sanchela, A. V., Thakur, A. D., & Tomy, C. V. (2022). Effects of S doping on the thermoelectric properties of FeSb$_2$. Materials Today: Proceedings, 67, 935–938. Elsevier.
6. Sinha, A., Ali, A., & Thakur, A. D. (2021). Ferromagnetism in graphene oxide. Materials Today: Proceedings, 46, 6230–6233. Elsevier.
7. Kumar, A., Kumari, K., Sivaprahasam, D., & Thakur, A. D. (2020). Thermoelectric properties in spark plasma sintered $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{0.5}\text{Co}_{0.5}\text{O}_3$. AIP Conference Proceedings, 2220(1), 120001. AIP Publishing LLC.
8. Sinha, A., & Thakur, A. D. (2020). Experimental bandgap tuning of graphene oxide with varying degree of oxidation and reduction. AIP Conference Proceedings, 2220(1), 140008. AIP Publishing LLC.
9. Kumar, A., Kumari, K., Tomy, C. V., & Thakur, A. D. (2020). Magnetic and thermoelectric properties of $\alpha-\text{MnO}_2$ nanorods. AIP Conference Proceedings, 2220(1), 080008. AIP Publishing LLC.

10. Kumari, K., Kumar, A., Thakur, A. D., & Ray, S. J. (2020). Effect of temperature and magnetic field in resistive switching behavior of $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3.\text{rGO}$ nano-composite. AIP Conference Proceedings, 2220(1), 080007. AIP Publishing LLC.
11. Chaitanya, B., Thakur, A. D., & Raj, R. (2020). Biomass gasifier-powered adsorption chiller for atmospheric water harvesting: prospects in developing world. In Advances in Energy Research, Vol. 1: Selected Papers from ICAER 2017 (pp. 451–460). Springer Singapore Singapore.
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16. Other Details:

Teaching experience: Various courses at UG, PG and PhD levels including Physics-I, Concepts of Nanomaterials, MEMS and NEMS, Statistical Physics, Solid State Physics, Nanomaterial Synthesis and Device Fabrication Laboratory, Nanoscale Measurement and Analysis Laboratory, B.Tech. Physics Laboratory, Quantum Mechanics, Nanoelectronics, Nanoscopic Dielectric and Ferroelectric Phenomena, Digital Electronics and Microprocessors, Instrumentation Techniques, Advanced Magnetic Materials and Applications, Electromagnetic Theory

Service: Reviewer for APS, AIP, Springer-Nature and Elsevier Journals; Contributing to Bihar Government Initiatives in various capacities including member of Science City Vetting Committee, RESPECT-BIHAR and Model School Lab Development Project; Committee member of Jawahar Novodaya Vidyalaya Vigyan Jyoti Scheme; ATAL-FDP Co-ordinator for an FDP on Novel Materials; Resource Person for a number of FDPs; Thesis Examiner for Certain Indian Universities.

Major Administrative experience: Served in past as Professor-in-charge(s) for Institute Annual Reports, Institute Convocation, Research Scholars Day, Institute Lectures, School Amenities; Program Co-ordinator for NSS; Warden; Head of Department

17. Projects (in chronological order):

Sl	Project Title	PI Name	Co-PI Name	Amount (Lac INR)	Status	Date of Start	Date of Completion	Funding Agency
1	CZTS based flexible solar cells	Dr. Ajay D. Thakur	Dr. A. K. Thakur	14.16	Completed	09-May-2014	08-May-2015	SRIRU, CEE IIT Patna
2	Design and Development of an Agricultural Waste Based Gasifier Heating System for GreenCHILLTM	Dr. Rishi Raj	Dr. Ajay D. Thakur	95.07	Completed	17-Aug-2016	16-Aug-2018	MHRD, SERB and Industry UAY
3	Spin transport in 2D material/perovskites (LSMO) heterostructures	Dr. Jayakumar Balakrishnan	Dr. Ajay D. Thakur	31.79	Completed	08-Jun-2016	07-Jun-2019	DST Nanomission
4	Persistent Light Emitting Phosphors for Solid State Lighting Applications	Dr. P Kumari	Dr. A. K. Choudhary, Dr. D. K. Sinha, Dr. Ajay D. Thakur (Co-PI from mentor Institute)	10.98	Completed	18-June-2019	30-Sep-2020	TEQIP collaborative research scheme III
5	Development of an agricultural waste based off-the-grid climate control unit for storage and processing of agricultural produce	Dr. Rishi Raj	Dr. Ajay D. Thakur	108	Completed	22-Feb-2019	7-January-2023	IMPRINT-II
6	Psychrometry Driven Design and Fabrication of An All Season Optima Atmospheric Water Harvester	Dr. Rishi Raj	Dr. Ajay D. Thakur	32.40	Completed	03-Dec-2020	02-Dec-2023	DST(TMD)
7	Developing inorganic-organic hybrid thin film architectures as artificial neurons for non-von Neumann architectures	Dr. Ajay D. Thakur	NA	31.98	Ongoing	20-02-2023	19-02-2026	SERB

8	Investigation of low global warming potential alternative chemicals to substances controlled under the Montreal Protocol	Dr. R. Raj	Dr. Ajay D. Thakur	50	Ongoing	2023	2028	PMU, Ozone Cell, MoEFCC

18. Crucial Administrative Responsibilities

Professor in charge, Institute Annual Reports, IIT Patna ▪ Streamlined the process (information collection, translation and archiving on module)	2012 – 2016
Convener, Foundation Day Event, IIT Patna ▪ Organized Blood Donation and Plantation Drive apart from regular activities including Foundation Day Lecture and Debate	2012
Professor in charge, Institute Lectures, IIT Patna ▪ Initiated laboratory visits and interaction sessions with faculty and students for the Invited speakers	2012 – 2014
Faculty Advisor, M.Tech. (Nanoscience and Technology), IIT Patna ▪ Contributed to streamlining the M.Tech. program and ensuring successful coordination between participating Departments	2012 – 2016
Program Coordinator, NSS Units-IIT Patna ▪ Streamlined NSS activities and created a footprint in the regional NSS map through extensive work in adjoining villages; Catalyzed Prayatna	2016 – 2018
Professor-In-Charge, Convocation ▪ Cost cutting without compromising on the quality and nature of event	2018
Convener, Research Scholars Day ▪ Enhanced participation of research scholars	2018
Professor-In-Charge, School ▪ Sustained efforts to meet the demands of campus community; contributed towards initiating KV on campus	2018 – 2021
Warden, Boys Hostel	2021-2021
Head of Department (Physics)	2021-2023
Coordinator, B.Tech. Fist Year Physics Laboratories	2024-
Besides the above, have also taken up suitable responsibilities at the Department level including Time Table In-charge, DAPC member, Department PhD Coordinator, Department Purchase Committee Member, Local Organizing Committee member for various conferences, workshops and short term programs organized by the Physics Department	