

Achievements / Appreciations / Awards

1] Project selected at state level **AVISHKAR-2009**

- ❖ “Synthesis, characterization and gas sensing properties of SnO₂ thin films prepared by spray pyrolysis” State level Inter University Research Festival AVISHKAR 2009, held at Solapur University, Solapur, during January 11-13, 2010.

2] Project selected at state level **AVISHKAR-2010**

- ❖ “ZnO nanorods by spray pyrolysis for gas sensing: synthesis to application approach” State level Inter University Research Festival AVISHKAR 2010, held at Maharashtra University of Health Sciences, Nashik, during January 21-23, 2011.

3] Best paper presentation: Second Prize

- ❖ “Structural, Electrical and Optical Properties of Spray Pyrolyzed SnO₂ Thin Films”, National Seminar on Nanoscience, Organized by UGC, New Delhi and GMD Arts, BW Commerce & Science College, Sinnar (Nashik), January 21-23, 2010 (Oral presentation).

4] INSPIRE fellow award for doctoral degree under INSPIRE program of Department of Science and Technology, New Delhi (2011-12)

5] Participation in “3rd Science Conclave: A Congregation with Nobel Laureates” held at IIT, Allahabad (Dec. 2010).

International / national conferences / seminars attended

- 1] Ganesh E. Patil, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Studies on gas sensing performance of SnO₂ thick film resistors”, Homi Bhabha Centenary BRNS-GND University Workshop on Molecular/Organic Electronic Devices (MOED-2009), Amritsar, September 22-25, 2009 (Poster presentation)
- 2] Ganesh E. Patil, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Structural, electrical and optical properties of spray pyrolyzed SnO₂ thin films”, National Seminar on Nanoscience, organized by GMD Arts, BW Commerce & Science College, Sinnar (Nashik), January 21-23, 2010 (Oral presentation)
- 3] Ganesh E. Patil, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Nanocrystalline tin oxide thin film as a low level H₂S gas sensor” International Conference on Nano Science & Technology (ICONSAT-2010), IIT, Bombay February 17-20, 2010 (Poster presentation)
- 4] Ganesh E. Patil and G. H. Jain, “Effect of annealing on spray pyrolyzed SnO₂ thin films and their gas sensing features”, National Seminar on Preparation of Nanomaterials and Their Applications (NSPNMA-2010), Organized by Arts, Commerce & Science College, Nandgaon (Nashik), February 20-22, 2010 (Oral presentation)
- 5] Ganesh E. Patil, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Characterization of SnO₂ thin films deposited by spray pyrolysis for gas sensing”, 15th Raman Memorial Conference (RMC 2010) Organized by IPA, Department of Physics, University of Pune, Pune, February 24-25, 2010 (Oral presentation)
- 6] Ganesh E. Patil, Short Term Training Program (STTP) on “Diverse Aspects of Nano Science and Technology”, held at Department of Chemical Technology, North Maharashtra University, Jalgaon during 1-12 April 2010.

- 7] G. H. Jain and G. E. Patil, "Effect of annealing temperature on gas sensing performance of SnO₂ thin films prepared by spray pyrolysis", Fourth International Conference on Sensing Technology (ICST-2010), University of Salento, Lecce, Italy, June 3 – 5, 2010. (Oral Presentation)
- 8] Ganesh E. Patil and G. H. Jain, "Thickness dependent gas sensing properties of SnO₂ thin films", International Workshop and Symposium on the Synthesis and Characterisation of Glass/Glass-Ceramics (IWSSCGGC-2010), organized by Centre for Materials for Electronics Technology (C-MET), Pune, July 7-10, 2010 (Poster Presentation)
- 9] Ganesh E. Patil, N. K. Pawar, V. B. Gaikwad and G. H. Jain, "Study of adsorption kinetics of H₂S on SnO₂ thin film sensors", XXXIX National Seminar on Crystallography (39th NSC-2010), organized by Post Graduate Department of Physics and Electronics, University of Jammu, Jammu, October 25-27, 2010 (Poster Presentation)
- 10] Ganesh E. Patil and G. H. Jain, "Nanocrystalline CdSnO₃ thin film as highly sensitive ethanol sensor", 5th International Conference on Sensing Technology, Massey University, Palmerston North, New Zealand 28 Nov 2011 – 01 Dec 2011 (Oral Presentation)
- 11] Ganesh E. Patil, D. D. Kajale, V. B. Gaikwad and G. H. Jain, "Cu-doped SnO₂ thin films by spray pyrolysis and its gas sensing properties", 1st International Conference on Physics of Materials and Materials Based Device Fabrication, Shivaji University, Kolhapur 17-19 Jan 2012 (Poster Presentation)

List of publications

Research articles published as a sole author

- 1] **Ganesh E. Patil**, D. D. Kajale, P. T. Ahire, D. N. Chavan, N. K. Pawar, S. D. Shinde, V. B. Gaikwad and G. H. Jain, "Synthesis, characterization and gas sensing performance of SnO₂ thin films prepared by spray pyrolysis", *Bulletin of Material Science* Vol. 34, No. 1, February 2011, pp. 1–9.
- 2] **Ganesh E. Patil**, D. D. Kajale, D. N. Chavan, N. K. Pawar, V. B. Gaikwad, G. H. Jain, "Spray pyrolyzed polycrystalline tin oxide thin film as hydrogen sensor", *Sensors & Transducers Journal*, Vol. 120, Issue 9, September 2010, pp. 70-79.
- 3] **G. E. Patil**, D. D. Kajale, S. D. Shinde, V. B. Gaikwad and G. H. Jain, "Synthesis and characterization of SnO₂ nanoparticles by hydrothermal route for gas sensing application" *International Nano Letters* Vol. 2, No. 1, January 2012, pp. 46-51.
- 4] **Ganesh E. Patil**, D. D. Kajale, V. B. Gaikwad, N. K. Pawar and G. H. Jain, "Properties and gas sensing mechanism study of CTO thin films as ethanol sensor", *Sensors & Transducers Journal*, Vol. 137, Issue 2, February 2012, pp. 47-58.
- 5] **G. E. Patil**, D. D. Kajale, V. B. Gaikwad, N. K. Pawar and G. H. Jain, "Synthesis and characterization of nanocrystalline CdSnO₃ thin film as an ethanol sensor", *Journal of Nano- and Electronic Physics*, Vol. 4 No 2 (2012) pp.02002.
- 6] **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, "Effect of thickness on nanostructured SnO₂ thin films by spray pyrolysis as highly sensitive H₂S gas sensor", *Advanced Science Letters* (Accepted for Publication).
- 7] **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, "Effect of precursor concentration on gas sensing performance of nanocrystalline SnO₂ thin films", *Advanced Science Focus* (Communicated).
- 8] **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, "Gas sensing performance of pure and Cu-doped SnO₂ thin films by spray pyrolysis", *Journal of Alloys and Compounds* (Communicated).

Research articles published as a co-author

- 1] S. D. Shinde, **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Synthesis of ZnO nanorods by spray pyrolysis for H₂S gas sensor”, *Journal of Alloys and Compounds*, Vol.528, 2012, pp. 109-114.
- 2] D. N. Chavan, V. B. Gaikwad, D. D. Kajale, **Ganesh E. Patil**, G. H. Jain, “Nano Ag-doped In₂O₃ thick film: A low temperature H₂S gas sensor”, *Journal of Sensors*, Volume 2011, Article ID 824215, 8 pages doi:10.1155/2011/824215.
- 3] S. D. Shinde, **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Synthesis of ZnO nanorods by hydrothermal method for gas sensor applications, Vol. 5, No. 1, March 2012, pp. 57-70.
- 4] D. N. Chavan, **G. E. Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Studies on gas sensing performance of Cr-doped indium oxide thick film Sensors”, *Sensors & Transducers Journal*, Vol. 125, Issue 2, February 2011, pp. 142-155.
- 5] D. N. Chavan, D. D. Kajale, **Ganesh E. Patil**, V. B. Gaikwad and G. H. Jain, “Studies on gas sensing performance of pure and surface chrominated indium oxide thick film resistors”, *Sensors & Transducers Journal*, Vol. 9, Special Issue, December 2010, pp. 82-95.
- 6] D. N. Chavan, V. B. Gaikwad, **Ganesh E. Patil**, D. D. Kajale, G. H. Jain, “CdO doped indium oxide thick film as a low temperature H₂S gas sensor”, *Sensors & Transducers Journal*, Vol. 129, Issue 6, June 2011, pp. 122-134.
- 7] D. D. Kajale, V. B. Gaikwad, S. D. Shinde, D. N. Chavan, **G E Patil**, V. P. Patil and G H Jain, “Effect of surface modification on SrTiO₃ thick films: room temperature H₂S gas sensor”, *Sensors & Transducers Journal*, Vol. 137, Issue 2, February 2012, pp. 10-21.
- 8] S. D. Shinde, **G. E. Patil**, D. D. Kajale, V. G. Wagh, V. B. Gaikwad and G. H. Jain, “Effect of annealing on gas sensing performance of nanostructured ZnO thick film resistors”, *International Journal on Smart Sensing and Intelligent System*, Vol. 5, No. 1, March 2012, pp. 277-294.
- 9] S. D. Shinde, **G E Patil**, D. D. Kajale, V. B. Gaikwad and G. H. Jain, “Gas sensing performance of nanostructured ZnO thick film resistors”, *International Journal of Nanoparticles*, Vol. 5, No. 2, 2012, pp. 126-135.

- 10] K. K. Thakur, D. V. Ahire, V. B. Gaikwad, **G. E. Patil**, D. D. Kajale, G. H. Jain, “Preparation of nano-In₂O₃ thin films by spray pyrolysis for gas sensing application”, *International Journal of Nanoparticles* (Article in Press)
- 11] N. K. Pawar, D. D. Kajale, **G. E. Patil**, S. D. Shinde, V. B. Gaikwad and G. H. Jain, “Gas sensing characteristics of pure and ZnO-modified Fe₂O₃ thick films”, *New Developments and Applications in Sensing Technology, Lecture Notes in Electrical Engineering*, 2011, Volume 83, pp. 123-135.
- 12] G. H. Jain, **Ganesh E. Patil**, D. D. Kajale and V. B. Gaikwad, “Cr₂O₃-doped BaTiO₃ as an ammonia gas sensor”, *New Developments and Applications in Sensing Technology, Lecture Notes in Electrical Engineering*, 2011, Volume 83, pp. 157-167.
- 13] R. D. Nikam, S. S. Gaikwad, **G. E. Patil**, G. H. Jain and V. B. Gaikwad, “Synthesis and applications of nano size titanium oxide and cobalt doped titanium oxide”, *Chemistry for Sustainable Development*, P. Ramasami et al. (eds.), DOI 10.1007/978-90-481-8650-1 4.
- 14] S. B. Deshmukh, **G. E. Patil**, R. H. Bari, L. A. Patil, and G. H. Jain, “Studies on gas sensing performance of pure and surface modified ZrO₂ thick film resistor”, *Proceedings of 5th International Conference on Sensing Technology ICST-2011*, 978-1-4577-0168-9, pp. 278 - 285. DOI. 10.1109/ICSensT.2011.6136981, 2012.
