

Bio-data:

Name: Dr. DIMPLE VITRAG SHAH

Qualification : Ph. D

Designation : Assistant Professor

Department : Department of Applied Physics

Address: Sardar Vallabhbhai National Institute of Technology

Date of Joining: 17|JUL|2007

Experience : 9 Years

Research Areas : Crystal Growth

Thin films

Nano Materials

Courses / Subject Involved With:

(1) M. Sc./B. Tech

Electronics

Electromagnetism

Solid State Physics

Laser and Fiber Optics

Electronic and Optical communications

Thin Films and Vacuum Technology

Research Publications :

1. "Study of Optical bandgap of $\text{InBi}_{1-x}\text{Sb}_x$ ($x=0.2$) thin films" Proceedings of IWPSD- IIT Madras 2 [2003] 917-919.
2. "Optical properties of $\text{InBi}_{1-x}(\text{Sb,Se})_x$ single crystals and thin films" Proceedings of ICOL, IRDE-Deharadun PP- OMSD 111 [2005].
3. "Study of Vicker's microhardness of $\text{InBi}_{0.85}\text{Sb}_{0.15}$ single crystals". Turkish Journal of Physics, 231-233, 31, 4, 2007.
4. "Growth and dislocation etching of $\text{InBi}_{1-x}\text{Se}_x$ ($x=0.15$) single crystals" Journal of crystal growth- Elsevier, 311 [2009] 986-989.
5. "Growth features and band gap determination of InBiSb long wavelength infrared photo detectors." Asian journal of chemistry, Vol. 21, No. 10 (2009), S135-137.
6. "Single crystal growth of $\text{InBi}_{1-x}\text{Se}_x$ by syringe pulling method." Journal of Crystal Growth, 312 (2010) 1085-1089.
7. "Hetero-Junction characteristics of p-Si and n- $\text{InBi}_{1-x}\text{Sb}_x/\text{InBi}_{1-x}\text{Se}_x$ thin films". International Journal of pure and Applied Physics, vol. 6, No.-1 (2010) 89-94
8. "Quantum size effect of $\text{InBi}_{0.95}(\text{Se,Sb})_{0.05}$ thin films". International Journal of pure and Applied Physics, Volume 6, Number 4 (2010), 413-417.

9. "Electrical and Mechanical Properties of Bi₂Te₃ Single Crystals" Proceeding of IWPSD 2010, pp. 328-230.
10. "Substrate temperature effect on structural properties of Bi₂Te₃ thin films" *J. Nano.- Electron. Phys.* **2** (2010) No3, P.
11. "Stacking fault in Bi₂Te₃ and Sb₂Te₃ Single crystals" *Journal of Crystal Growth* **318** (2011) 1179–1183
12. "Characterization of nanocrystalline cobalt doped TiO₂ sol-gel material" *Journal of Crystal Growth* **352** (2012) 224–228.
13. "Structural defects and microindentation analysis of zone melted Bi₂Te₃ whiskers" *Journal of Crystal Growth* **352** (2012) 143–146
14. "Substrate temperature effect on structural and optical properties of BiTe thin films," AIP conference proceeding 2012, 1451, p. 245
15. "Synthesis and characterisation of Copper Zinc Tin Sulphide (CZTS) compound for absorber material in solar-cells" *Journal of Crystal Growth*, **362** (2013) 174-177.
16. "Synthesis, Structural, Optical, and Magnetic Properties of Fe Doped TiO₂ along with different concentration" *Advanced Materials Research* Vol. 665 (2013) pp 118-126.
17. "Structural and Optical properties of Copper Zinc Tin Sulphide (CZTS) material synthesized using binary sulphide precursors, AIP conference proceeding 2013, 1512, p. 1284.
18. "Effect of annealing on structural properties of copper zinc tin sulphide (CZTS) material, *Journal of Nano and Electronic Physics*, **5,2** (2013) 2031-2033
19. "Synthesis and photocatalytic application of α-Fe₂O₃/ZnO fine particles prepared by two-step chemical method." *Carbon Sci. Tech* **5/2** (2013) 265-268.
20. "Effect of Temperature on Crystallite Size of Lanthanum Cerium Oxide (La₂Ce₂O₇) and its Optical Properties." *Carbon Sci. Tech* **5/1** (2013) 225-230.
21. Kirit Siddhapara, D.V. Shah, "Synthesis, Structural and Magnetic Properties of Co Doped TiO₂ by Sol-Gel material". *Journal of Nano Research*, **24** (2013)168-175, TTP (Accepted- ISSN: 1661-9897, SCI).
22. "Experimental Study of Transition Metal Ion Doping on TiO₂ with Photocatalytic Behavior." *Journal of Nanoscience and Nanotechnology* Vol. 14, 6337–6341, 2014.
23. "Synthesis of La₂Ce₂O₇ Nanoparticles by Co-Precipitation Method and Its Characterization", *Journal of Nanoscience and Nanotechnology*, Vol. 14, 6072–6076, 2014
24. Kirit Siddhapara, D.V. Shah, "Study of Photocatalytic Activity and Properties of TM (Fe, Mn, Co) Doped Nanocrystalline TiO₂ Prepared by Sol-Gel Method". *Advances in Materials*

Science and Engineering, (2014), Hindawi Publishing Corporation (In press, ISSN: 1687-8434, SCI).

25. "Transport Property Measurements in Doped Bi₂Te₃ Single Crystals Obtained via Zone Melting Method" Journal of Electronic Materials 44, 6(2015) 1509-1516

26. "Influence of deposition parameters and annealing on Cu₂ZnSnS₄ thin films grown by SILAR", Journal of Alloys and Compounds, , 622, (2014)942-947

27. "Influence of doping on structural and optical properties of Bi₂Te₃ thin films", Thin Solid Films, 589 (2015) 396-402

28. " Cu₂ZnSnS₄ Thin-Films Grown by Dip-Coating: Effects of Annealing" Journal of Alloys and Compounds JALCOM-D-15-07583

29. "structural, Optical and Photocatalytic properties of ZnS/ α -Fe₂O₃ core shell Nano Particles" Russian Journal of General Chemistry 85,3 (2015) 689-691

30. "Study of Photocatalytic activity and Magnetic properties of Co, Mn metal ions doped Nanocrystalline TiO₂ prepared by Sol-Gel Method" Journal of Crystal Growth, doi: 10.1016/j.jcrysgro.2016.03.016

31. "INVESTIGATION OF IONIC CONDUCTIVITY OF LANTHANUM CERIUM OXIDE NANO CRYSTALLINE POWDER SYNTHESIZED BY CO PRECIPITATION METHOD" Journal of Crystal Growth, doi: 10.1016/j.jcrysgro.2016.01.007

Guided M. Tech. Student : Nine M. Sc project

Guided Ph.D. Student : Four and three PH. D. (Pursuing)

Conference/workshop/seminar/short courses etc. organized:

1. Advances in condensed matter physics, SVNIT, 31 Aug-4 Sept 2009.
2. Non-Destructive testing, SVNIT, 5-9 Oct 2009.
3. Recent trends in material Sciences and Technology, SVNIT, 7-11 Dec 2009.
4. Advance topics in applied Physics, SVNIT, 01-05 Feb 2010.
5. Optics and photonics, SVNIT, 22-26 Feb 2010.
6. Thin Film and Vacuum Technology (TFVT – 2013), 9-14 Dec 2013.

Administrative duties performed at Departmental and Institute Level:

1. Co-Chairman of Social and Cultural activities 2009-2010.
2. Member of cell for awareness on women's right.
3. Member of SVP school committee 2009-2016.
4. Member of Medical Advisory committee 2011-2016.
5. Co-Chairman of Literary and Debating Committee, 2010-2013.

6. U.G. In-charge (Physics) B-Tech Program.2009-2011.
7. Coordinator (physics) Annual Report 2009-2016.
8. Departmental Examination Cell, 2009-2016.
9. Physical Stock verification committee, 2011-2016.
10. Member of Sub-core committee in convocation program,2011-2014.

Membership of Professional Bodies :

1. Life member of IPA
2. Life member of MRSI