**Dr. Malek**



**Email:** malek-397207@gulfjobseeker.com

**CAREER OBJECTIVE:**

Seeking an academic position as a researcher and lecturer in the field of Physics. Perform research, including teaching courses and supervising students in their academic assignment and research work.

**EDUCATION**

**Ph.D. in Physics**

Thesis Supervisor

Department of Physics

Sardar Patel University

Vallabh Vidyanagar-388120

Gujarat, India.

Completed, December-2018

Prof. Sunil H. Chaki

**Thesis Title:** Synthesis and Characterization of Iron Oxide/ Chalcogenides in Nanoparticles and Thin Films Forms

**M.Phil. in Physics** Completed, January-2013

Department of Physics Marks 62%

Sardar Patel University Division 1

Vallabh Vidyanagar-388120

Gujarat, India.

**Dissertation Title:** Synthesis and characterization of Fe3O4nano-particles

**M.Sc. in Physics**

Department of Physics

Sardar Patel University

Vallabh Vidyanagar-388120

Gujarat, India.

Completed, June-2011

Marks 60%

Division 1

**B.Sc. in Physics**

Shri R. K. Parikh Arts & Science College

Gujarat University

Petlad-388450

Gujarat, India.

Completed, April-2009

Marks 72%

Division 1

**H.S.C.**

N. K. High School

GHSE Board

Petlad-388450

Gujarat, India.

Completed, March-2005

Marks 48%

Division 3

**ADDITIONAL QUALIFICATIONS**

* Certificate for **“Computer Programming & Application with First Class”** from Shri R. K. Parikh Arts & Science College, Petlad Approved by UGC & Gujarat University.
* Certificate for **“Diploma course in Web Page Designing with First Class”** from Shri R. K. Parikh Arts & Science College, Petlad Approved by UGC & Gujarat University.
* Certificate from **Centre for Continuing Education, IIT Kanpur** for participating and completing online course **"Basics of Special Theory of Relativity"** during 18thDecember to 8thMarch 2019.

**WORK EXPERIENCE**

August 2012 – August 2014

**Assistant Professor in Physics**

Gujarat, India.

**Key Responsibilities Handled:**

* Prepare and deliver lectures to undergraduate students on different topics of physics
* Maintaining discipline in accordance with the University procedures, and to encourage good practice with regard to punctuality, behavior, standards of work and independent learning.
* Provide educational environment commensurate to physical, social, intellectual and emotional development of students.
* Initiate, facilitate, and moderate classroom discussions.
* Collaborate with colleagues to address teaching and research issues.
* Designs and coordinates tests, documents test results, and assists in student presentations by monitoring students’ laboratory work.
* Analyze and grade students' laboratory work, class work, papers and assignments.
* Maintain and update student attendance records, grades and varied required records.
* Develop course materials like homework assignments, laboratory manual and handouts.
* Convey and interact with parents, students, staff and community
* Invigilator in University Examination.
* Examiner in Practical Examination.
* Paper Correction.

**FELLOWSHIP**

* Junior Research Fellow (2015-2017)

UGC: Maulana Azad National Fellowship for Minority Students

* Senior Research Fellow (2017-2020)

UGC: Maulana Azad National Fellowship for Minority Students

**RESEARCH SKILLS**

* **Synthesis of Nanoparticles and Thin Films:**

Iron oxide (Fe3O4) nanoparticles were synthesized by chemical reduction method. In furtherance Mn doped Fe3O4 nanoparticles have been synthesized by chemical reduction method. Two different concentrations 10% and 15% of Mn were used for doping Fe3O4.

Parallel to undoped and Mn doped Fe3O4 nanoparticles synthesis of iron chalocogenides (FeS) were synthesized in nano and thin films form. The nano forms were synthesized by chemical reduction technique. Thin film

synthesis was done by chemical bath deposition, dip coating, successive ionic layer adsorption and reaction (SILAR) chemical techniques.

 **Crystal Growth:**

I have synthesized high quality crystalline samples of Ternary chalcopyrite semiconductors using Chemical Vapour Transport (CVT) technique.

 **Structural Characterization:**

I have expertise on structural characterization using X-ray Diffraction and Transmission Electron Microscopy. I also have experience on metallographic examinations like Scanning Electron Microscopy (SEM), Atomic Force Microscopy, Optical Microscopy, and Energy Dispersive x-ray Spectroscopy and also some optical study like UV-Vis-NIR spectroscopy, Photoluminescence (PL) Spectroscopy and Fourier Transforms Infrared Spectroscopy.

 **Physical Properties Measurements:**

Magnetic properties (Magnetization) using Vibrating Sample Magnetometer (VSM), Transport Properties (resistivity) and Thermodynamic properties using TG-DTG-DTA.

**LIST OF PUBLICATIONS**

1. **“Magnetite Fe3O4 nanoparticles synthesis by wet chemical reduction and their characterization”** S H Chaki, **Tasmira J Malek**, M D Chaudhary, J P Tailor and M P Deshpande in in IOP journal Advances in NaturalSciences: Nanoscience and Nanotechnology Volume no 6 (2015) 035009.

2. **“Thermal decomposition study of Mn doped Fe3O4 nanoparticles” Tasmira J. Malek,** S. H. Chaki, J. P. Tailor,

and M. P. Deshpande in AIP Conference Proceedings **1728** (2016) 020390.

3. “**CuAlS2** **Thin Films - Dip Coating Deposition and Characterization,** Sunil H. Chaki, Kanchan S. Mahato, **Tasmira J. Malek**, M.P. Deshpande in Journal of Science: Advanced Materials and Devices (2017), **doi: 10.1016/j.jsamd.2017.04.002.**

4. **“Thermal decomposition study on CuInSe2 single crystals”** Sanaysinh Chahan, Sunil Chaki, M. P. Deshpande,Tasmira J. Malek, J. P. Tailor in International Journal of Thermophysics**39:18** (2018).

5. **“Nonisothermal decomposition kinetics of pure and Mn-doped Fe3O4 nanoparticles**” **Tasmira J. Malek**, S.

H. Chaki, J. P. Tailor, M. P. Deshpande, Journal of Thermal Analysis and Calorimetry (Springer) **132 (2)** (2018) 895-905.

6. **“Cadmium sulphide (CdS) thin films deposited by chemical bath deposition (CBD) and dip coating techniques - a comparative study”**Ankurkumar J. Khimani, Sunil H. Chaki, **Tasmira J. Malek**, Jiten P. Tailor,

Sanjaysinh M. Chauhan, M. P. Deshpande, Material Research Express (IOP)**5** (2018)036406.

7. **“Structural, morphological, optical, thermal and magnetic study of mackinawiteFeS nanoparticles synthesized by wet chemical reduction technique**” **Tasmira J. Malek,** Sunil H. Chaki, M. P. Deshpande,Physica B: Physics of Condensed Matter**546** (2018) 59-66.

8. “**Study of the effect of Mn doping on Fe3O4** **nanoparticles synthesised by wet chemical technique**” **Tasmira** **J. Malek**, S. H. Chaki, M. D. Chaudhary, J. P. Tailor, M. P. Deshpande, Iranica Journal of Energy andEnvironment**9(2)** (2018) 121-129.

9. “**The structural, morphological and optical study of chemical bath deposition and spin coating deposited**

**mackinawiteFeS thin films**”**Tasmira J. Malek**, Sunil H. Chaki, M. P. Deshpande, Materials Science inSemiconductor Processing (Under Review - 2018)

**CONFERENCE AND WORKSHOP:**

1. Presented a research paper entitled (poster) “**Synthesis and Characterization of Fe3O4** **Nanoparticles**” in the “**Current Trends In Research and Application of Physical Sciences in Gujarat**” held on Department of

Physics, SPU on 29th December, 2012.

1. Presented a research paper entitled (Oral) “**Magnetite Fe3O4** **Nanoparticles Synthesis by Wet Chemical**

**Reduction and Their Characteization**” in the “**International** **Conference on Nanoscience** **and**

**Nanotechnology**” held on Department of Applied Physics, BabasahebBhimraoAmbedkar University,Lucknow, during 18-20 November, 2013.

1. Presented a research paper entitled **“Mn Doped Fe3O4** **Nanoparticles Synthesis by Wet Chemical Reduction** **and Their Characterization”** at the UGC Sponsored National Conference on **“Latest Developments in Basic and Applied Sciences”** held at M. B. Patel science college, Sardar Gunj, Anand - 388 001, Gujarat, India on10th January, 2015.
2. Presented a research paper entitled **“Mn Doped Fe3O4** **Nanoparticles - Wet Chemical Synthesis and** **Characterization”** at National Conference on **“Condensed Matter Physics and Applications - (cmpa 2015)”** held at **Department of physics**, Manipal Institute Of Technology, Manipal University, Manipal – 576104, India, during 27-28 March, 2015.
3. Presented a research paper entitled **“Thermal Decomposition Study of Mn doped Fe3O4** **Nanoparticles”** at the ISRO, BRNS, DAE, DRDO sponsored International conference on **“International Conference on** **Condensed Matter & Applied Physics”** held at Department of Physics, Govt. Engineering college, KarniIndustrial Area, Pugal Road, Bikaner, Rajasthan, India.
4. Presented a research paper entitled **“ Mn doped Fe3O4** **Nanoparticles** **–** **Wet Chemical Synthesis And**

**Charactrization”** at International Conference on **“4thNano Today Conference”**heald at JW Marriott MarquisHotel in Dubai, during 6-10 December.

1. Presented a research paper entitled “**Synthesis and Characterization of Cadmium Sulphide Thin Films**

**Deposited by Dip coating Technique**” at 9thNational Level Science Symposium 2016 on “**Recent Trends in Science and Technology**” held at Christ College, Rajkot,on 14thFebruary, 2016.

1. Presented a research paper entitled “**Study of Various Energy Levels of Fe3O4** **Nanoparticles Using Optical** **Spectroscopy**” atUGC Sponsored National Level **“Interdisciplinary Research Scholars Meet – 2016(IRSM –**

**2016)”** held at Centre For Interdisciplinary Studies In Science & Technology (CISST), Sardar Patel University,VallabhVidhyanagar, During 3-4 March, 2016 .

1. Participate in the workshop **“Electron Microscopy”** (FEG-SEM with EDAX and TEM) Instruments held at Sophisticated Instrumentation Centre for Applied Research & Testing (SICART), VallabhVidhyanagar, During 28-29 March.
2. Presented a research paper entitled “**Analysis of 20 Years Old Transformer Oil by Spectroscopy and** **Dissolved Gas Analysis Techniques**” at “**XXXI Gujarat Science Congress - 2017**” held at GERMI-PDPUGadhinagar, during 4-5 February, 2017.
3. Presented a research paper entitled “**Non-isothermal Decomposition Kinetics of Pure and Mn Doped Fe** **3** **O4** **Nanoparticles**” at **“National Workshop on Analytical Techniques for Material Characterization (NWATMC)”** held at Department of Physics, Sardar Patel University, VallabhVidhyanagar, On 20th March.
4. Presented a research paper entitled “**Study of Cadmium Sulphide (CdS) Thin Films**” at **“National Workshop** **on Analytical Techniques for Material Characterization (NWATMC)”** held at Department of Physics, SardarPatel University, Vallabh Vidhyanagar, On 20th March.
5. Presented a research paper entitled “**Study of Old Transformer Oil by Infrared Spectroscopy and Dissolved** **Gas Analysis Techniques**” at **“National Workshop on Analytical Techniques for Material Characterization (NWATMC)”** held at Department of Physics, Sardar Patel University, VallabhVidhyanagar, On 20thMarch.
6. Presented a paper entitled *“***Non-isothermal Decomposition Kinetics of Pure and Mn Doped Fe3O4**

**Nanoparticles**” at “**4th International Conference on Nanoscience and Nanotechnology –ICONN 2017**” heldat SRM University, Kattankulanthur, Chennai, during 9-11 August.

**LANGUAGES**

 English

 Gujarati

 Hindi

 Urdu

**PERSONAL DETAILS**

Birthday:

Marital Status:

Gender:

Nationality:

December 5, 1987

Married

Female

Indian

**Declaration**

I hereby declare that the information contained herein is true and correct to the best of my knowledge and belief.

**Dr. Malek**