



MES AMANI COLLEGE  
OF VANDALUR

# NCIATRI 23 ABSTRACTS 20

Editors

**Ansar E. B., Dhanya P. R., Jisha K. C., Kesavan K.  
Lathif Penath, Mohammed Areej E. M. & Sheena P. A.**



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## Contents

Sl. No.	Title & Authors	Page No.
39	A Novel Approach to the Synthesis of White Light Emitting Dy <sup>3+</sup> Doped Lanthanum Oxalate Single Crystals Via Hydro Silica Gel Method <i>Aryamol Stephen</i>	39
40	The Impact of Deposition Time on the Structural and Optical Properties of Flower-like PbS Thin Films <i>Ashitha T. M. &amp; Sheeba N. H.*</i>	40
41	Structural Properties and Antibacterial activity of Copper Oxide Nanoparticles <i>Chithra B. &amp; Sheeba N. H.*</i>	41
42	Anatase to Rutile Phase Transformation of TiO <sub>2</sub> Nanoparticles <i>Hasna N. J., Anna Rose &amp; Sheena P. A.*</i>	42
43	Inhibiting Action of Cu Doping on the Phase Transformation of TiO <sub>2</sub> Nanoparticles <i>Shanu A. S., Greatel Paremel &amp; Johns Naduvath*</i>	43
44	Investigation on Trivalent Neodymium Doped (Nd <sup>3+</sup> ) Fluoroborosilicate Glasses for Laser Application. <i>Sreedevi</i>	44
45	Parental Bonding and Perception of Success Among Late Adolescent Athletes <i>Adnan Hamza Kizhisseri, Minna Farhana, Pranav Mohan, Rasha K. M.* &amp; Minsika Hilal.</i>	45
46	Suicidal Ideation and Academic Stress Among Grade X Students Following ICSE, State and CBSE Syllabi in Kerala: A Comparative Study <i>Alna Elisubha V. S., Vismaya B., Mohammed Saif Zidan &amp; Soumya Starlet C. T.</i>	46
47	Academic Adaptability and Resilience Among College Students based on Learning Style <i>Ayisha A. P. &amp; Lathief Paneth*</i>	47
48	Effect of Aggression on School Refusal Behavior Among Adolescence <i>Bhagya B. L. &amp; Farhana Nazar*</i>	48
49	Pain Appraisal, Catastrophizing, Fear of Progression and Death Anxiety Among Cancer Patients <i>Elsa Elisabeth Wilson &amp; Soumya Starlet C. T.</i>	49
50	Emotion Regulation, Coping Abilities and Cognitive Flexibility Among Service Oriented Youth Organisation Members and Non Members <i>Farhana Nasar, Anaswara C. G., Afa K. S., Muhammed sharik, Sneha Rajeeva n. K.*</i>	50
51	Perceived Social Support and Bullying Among Adolescents <i>Fathimath Hiba* &amp; Farhana Nasar K.</i>	51
52	Relationship Between Expectationism and Self Care Behaviour Among Young Adults <i>Hareesh Mohan E. R. &amp; Lathif Penath*</i>	52

## The Impact of Deposition Time on the Structural and Optical Properties of Flower-like PbS Thin Films

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Polycrystalline PbS thin films are deposited onto Flint glass substrates by the method of chemical bath deposition (CBD) at different duration of deposition time. The structure and surface morphology of the films are characterized by X-ray diffraction (XRD) and field effect scanning electron microscopy (FE-SEM). XRD pattern exhibits polycrystalline structure with preferential orientation along (200) direction, parameters such as crystallite size, lattice constant, lattice-strain and dislocation density are calculated. The FE-SEM images show appearance of flower like structure on formation of PbS films which is indicative of suitability in gas sensing applications. Studies on optical properties carried out by UV-Vis spectroscopy measurements show bandgap in the range 1.65eV-1.41eV. The photoluminescence spectra of the films exhibit two peaks centered at around 613 nm and 738 nm after excitation at 450 nm.