



NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

Kaliyakkavilai, Kanyakumari District - 629153

Accredited by NAAC with 'B' Grade

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FOURTH NATIONAL CONFERENCE ON ADVANCED MATERIALS

(NCAM-2022)


March 26, 2022



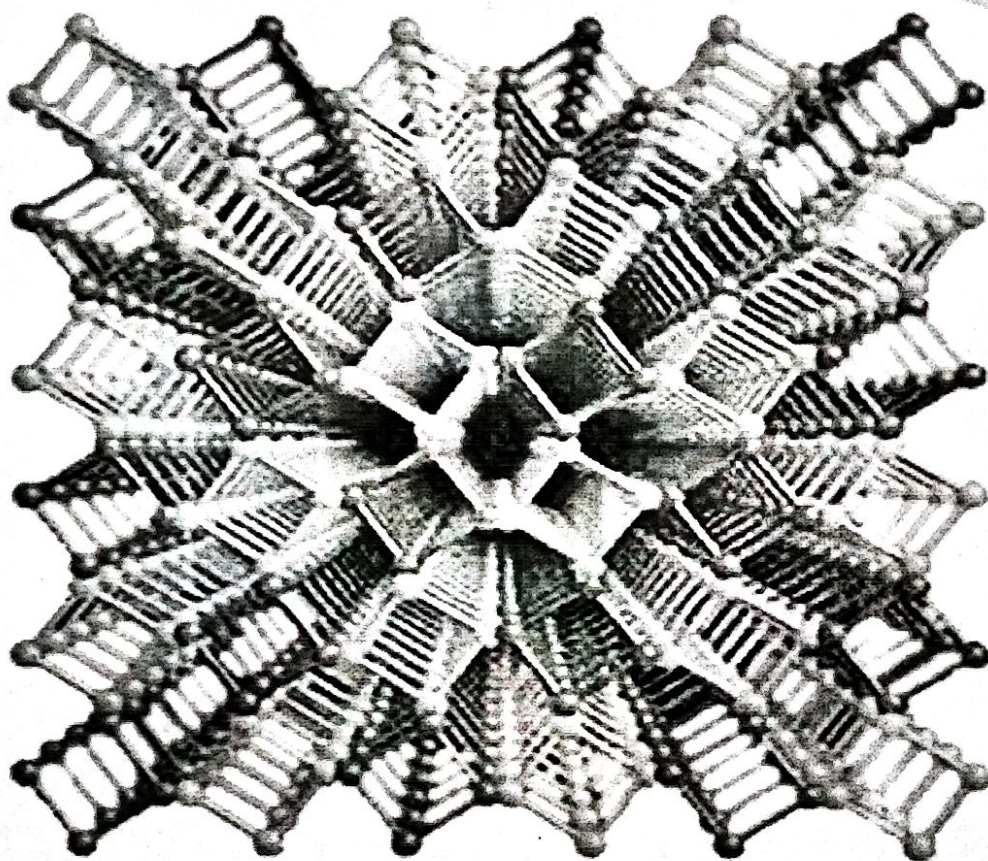
This is to certify that *Mr./Ms./Dr. IREN..... SOBIA...A.... Assistant Professor*
.Muslim.... Arts.... College,..... Thiruvithanade..... has attended the Fourth
National Conference on Advanced Materials (NCAM-2022) organized by the
Department of Physics, Nanjil Catholic College of Arts and Science, Kaliyakkavilai on
March 26, 2022 and presented a paper (Poster/Oral) entitled *Structure.... of.... Sun's.... magnetic*
field.... during.... polar.... reversal.... phase.....


Rev. Fr. Dr. M. Eckermens Michael
Secretary and Correspondent


Dr. M. Amalanathan
Convenor


Dr. A. Mecnakshisundararajan
Principal

**Fourth National Conference
on
ADVANCED MATERIALS
(NCAM- 2022)**



Conference Proceeding

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Dr.M.Amalanathan

Organized by

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Nanjil Catholic College of Arts and Science

Kaliyakkavilai

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Editor

Dr.M.Amalanathan

**Assistant Professor, Department of Physics
Nanjil Catholic College of Arts and Science**

Email: nathan.amalphysics@gmail.com

Mobile: 9940347178



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CONTRIBUTED PAPERS

1. Growth and optical analysis of 4-dimethyl amino benzaldehyde-2,4-dinitroaniline single crystals (S. Abila^a, R.P.Jebin^{a*}, T.Suthan^b)
2. Studies on optical, thermal and mechanical properties of 2,4-dihydroxyacetophenone single crystal (P.P. Abirami Priya^{a,e*}, T. Suthan^{b,e}, S. Abraham Thambi Raja^{c,e}, V. BenaJothy^{d,e})
3. Variation of solar wind parameters observed during solar cycle 24 (Abisha S Santham^{1*} and A. Iren Sobia²)
4. DFT computations and spectroscopic analysis of *o*-(4-CHLOROPHENYL)METHYL]3-PHENYLUREA fungicide (W.Abisha¹, D.Aruldas¹, LHubert Joe²)
5. Periodicities of solar flare activity during solar cycle 23 and 24 (J.M. Aclin Merisha^{1*} and A. Iren Sobia²)
6. Electronic properties and NBO analysis on (RS)-3-(3, 5-Dichlorophenyl)-5-methyl-5-vinylloxazolidine-2,4-dione (E.S.Ashlin^{a*}, P.R.Babila^b, G.Edwin Sheela^a)
7. Spectral and structural studies of 3-Bromophenyl Methoxy Methylurea (P.R.Babila^a, E.S.Ashlin^b, G.Edwin Sheela^{c*})
8. Investigation on Antibacterial and Nonlinear Optical properties of hexa aqua copper (II) toluene-4-sulfonate (PTSC) single crystals (J. Beena^a, A.S.Jebamalar^{b*})
9. Green synthesis of MgO and Ag-MgO nanocomposite using Catharanthus Roseus leaf extract for photocatalytic and biomedical application. (Benisha.R¹, Jeni James.J², Amalanathan.M²)
10. Single crystal growth, x-ray diffraction, vibrational studies and optical properties of p-nitrophenol sodium sulphate (pnss) single crystals (S.S. Bersha^a, A. Rathika^{*})
11. Structural, Effects of hydrogen bonding(C-H...O and C-H...N), FMO, MEP and molecular docking analysis of N-(4-Bromophenyl)-1-(2-nitrophenyl)methanimine (Bravanjalin Subi E^{1,2}, D.Aruldas²)
12. Synthesis of silver nanoparticles using Syzygiummalaccense fruit extract and evaluation of their catalytic activity and antibacterial properties (Herbin Basalius H^a, Amalanathan. M^{b*}, Maria Lenin.M^c)
13. Structure of sun's magnetic field during polar reversal phase (Iren Sobia. A¹ and Bidhu S S²)

OP-13	Structure of sun's magnetic field during polar reversal phase
Iren Sobia. A¹ and Bidhu S S²	
¹ Assistant Professor, Department of Physics and Research Centre, Muslim Arts College, Thiruvithancode. ² Assistant Professor, Department of Physics & Research Centre, Nanjil Catholic College of Arts & Science, Kaliyakkavilai irensobia@gmail.com, bidhuss@gmail.com	
Abstract	
Solar wind that is slow, cool and dense wind is related to closed magnetic field lines and the heliospheric current sheet. Ulysses in its first and second orbit observed slow solar wind velocity with high density protons. This observation is quite different from all the earlier observations made on the slow solar wind velocity. This event coincides with a large scale solar phenomena, the solar polar reversal, when the Sun exchanges its solar global magnetic polarity. The polarity reversal mechanism is extremely slow phenomena mainly taking place in the interior of the convective zone, when Sun starts reversing its polarity. During the reversal phase the solar surface is occupied with mixed polarities. The polarities often form closed magnetic loops, found to spread over wide coronal surface, accompanying small coronal holes that forms ambient solar wind from the surface of Sun. The polarity reversal at the poles start after sunspot maximum. The solar wind that emerge during the polarity reversal is found to be having slow solar speed with high concentrations of proton particle.	

OP-14	Vibrational spectroscopic characterization, DFT studies and structural investigations of N-(2-Hydroxybenzylidene)-2-Iodoaniline
D.Jayareshmi^{1*}, D.Aruldas^{2*}	
^{1*} Assistant Professor, Department of Physics & Research Centre, Women's Christian College, Nagercoil. ^{2*} Associate Professor, Department of Physics & Research Centre, Nesamony Memorial Christian College, Marthandam.	
Abstract	
To evaluate the molecular optimized geometry parameter of N-(2-Hydroxybenzylidene)-2-Iodoaniline was performed using gaussian'09 software packages. The observed IR and Raman bands were compared with harmonic vibrational frequencies of the optimized structure of N-(2-Hydroxybenzylidene)-2-Iodoaniline, calculated using the (B3LYP) with 6-31G (d, p) level of theory, and assigned on the base of potential energy distribution (PED). The vibrational frequency assignments were made with a high degree of accuracy with the help of Chemcraft software program. All the calculations were done for the optimized structures in gas phase. GAUSSVIEW program has been considered to get visual animation. The experimental UV-Vis absorption spectrum was recorded and compared with the simulated time-dependent (TD-DFT) approach. HOMO-LUMO energy gap, Charge analysis, Molecular electrostatic potential and Natural Bond Orbital (NBO) analysis were done.	
Keywords: DFT, NBO, Charge Analysis and MESP	