

Name : Dr. M. KARTHIKA
Designation : Assistant Professor
Department : Department of Physics
Date of Birth : 30.08.1978
Address (Residential) : 6, Sakthi Nagar,
New Alagappa Layout,
Palakkad Road, Pollachi.
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Academic Qualifications : M.Sc., M.Phil., PGDCA., Ph.D
Area of Specialisation : Molecular Quantum Mechanics
Total Teaching Experience : 18 years 6 Months
Research Guidance:

M. Phil	: Completed - 9	Ongoing - 1
Ph.D	: Ongoing -1	

Research Projects carried out:

UGC Minor Research Project entitled “Theoretical studies on Molecular structure and Intermolecular Interactions of Xanthine derivatives” funded by UGC during 2011-13 for an amount of Rs. 1, 05,000/-.

Awards and Honours

1. Awarded Gold medal in M.Sc Physics for Securing First Rank.
2. Awarded Silver medal in B.Sc Physics for Securing Second Rank.
3. Awarded Silver medal in PGDCA for Securing Second Rank.

Papers Published in International Journals:

1. Preparation and characterization of polymer electrolyte based on biopolymer I-Carrageenan with magnesium nitrate, S.Shanmuga Priya, **M. Karthika**, S.Selvasekarapandian and R.Manjuladevi, Solid State Ionics, 327, 2018, 136-149.

2. Study of Biopolymer I-carrageenan with magnesium perchlorate, S. Shanmuga Priya, **M. Karthika**, S.Selvasekarapandian, R. Manjuladevi and S. Monisha, Ionics, 24, 2018, 3861-3875.
3. Hybrid DFT study on non-covalent interactions and their influence on pKa's of magnesium-carboxylate complexes, S. Kavitha, P. Deepa, **M. Karthika**, R. Kanakaraju, Journal of Molecular Graphics and Modelling 85, 2018, 13-24.
4. Topological analysis of metal–ligand and hydrogen bonds in transition metal hybrid structures—A computational study, S. Kavitha, P. Deepa, **M. Karthika**, R. Kanakaraju, Polyhedron 115, 2016, 193-203.
5. Hydrogen-bond interactions in hydrated 6-selenoguanine tautomers: a theoretical study, **M. Karthika**, L. Senthilkumar and R. Kanakaraju, Structural Chemistry, 25, 2014, 197-213.
6. Spectroscopic investigations and hydrogen bond interactions of 8-aza analogues of xanthine, theophylline and caffeine: a theoretical study, **M. Karthika**, R. Kanakaraju, L. Senthilkumar, Journal of molecular modeling, 19, 2013, 1835-1851.
7. Theoretical investigations on hydrated 6, 8-dithioguanine tautomers, **M. Karthika**, L. Senthilkumar and R. Kanakaraju, Structural Chemistry, 23, 2012, 1203-1218.
8. Theoretical studies on hydrogen bonding in caffeine–theophylline complexes, **M. Karthika**, L. Senthilkumar and R. Kanakaraju, Computational and Theoretical chemistry, 979, 2012, 54-63.
9. Hydrogen bond interactions in hydrated acetylsalicylic acid, **M. Karthika**, K. Senthilkumar and R. Kanakaraju, Computational and Theoretical Chemistry, 966, 2011, 167-179.
10. Post Hartree–Fock and density functional theory studies on Di-Protonated Allopurinol²⁺, V. Sathyabama, **M. Karthika**, K. Senthilkumar, K. Anandan and R. Kanakaraju, Journal of Molecular Structure: THEOCHEM 810, 2007, 25-30.

Papers presented in Seminar/Conference/Symposia/Workshop

1. National Conference on “Advanced Functional Materials and their Applications in Engineering (NCAFMAE 2017)” organised by Department of Science and Humanities, Dr. N.G.P. Institute of Technology, Coimbatore on 25th January 2017.
2. DST-SERB sponsored Two days National conference on" Computational and Experimental Physics of Functional Materials" organised by Department of Physics, K.S.R College of Arts and Science for women on 16th & 17th Dec 2016.
3. Theoretical Chemistry Symposium 2010 held at Indian Institute of Technology, Kanpur, during 08-12 December 2010.
4. Theoretical Chemistry Symposium 2006 organised by School of Chemistry, Bharathidasan University, Tiruchirapalli during 11-13th December 2006.

Participation in Seminar/Conference/Symposia/Workshop

1. Science Academies “Lecture workshop on “Emerging Trends in Physics” organised by the Department of Physics, NGM College, Pollachi during 3rd & 4th March 2017.
2. National Seminar on “Empowering the Youth to Enrich Mankind” organised by the Department of Human Excellence, NGM College, Pollachi on 29th January 2016.
3. Science Academies Lecture workshop on “Recent Trends in Physics” organised by the Department of Physics, NGM College, Pollachi during 23rd & 24th January 2015.
4. Workshop on Theoretical Physics organised by the Department of Physics, Bharathiar University, Coimbatore during 17-20 December 2012.
5. Theoretical Chemistry Symposium 2010 held at Indian Institute of Technology, Kanpur, during 08-12 December 2010.

6. Seminar on “Nuclear Energy for National Development” organised by The Bhabha Atomic Research Centre, Mumbai and The Department of Physics, NGM College, Pollachi at NGM College on 3rd December 2009.
7. National Level Workshop on “Recent Advancements in Theoretical Physics and Quantum Computation” sponsored by Theoretical Physics Seminar Circuit, Department of Science and Technology, Government of India, held during 17-19 March 2009 at NGM College, Pollachi.
8. Lecture Workshop on “Frontier Topics in Physics” sponsored by Indian Academy of Sciences, Indian National Science Academy and National Academy of Sciences, India held during 22-24 January 2008 at NGM College, Pollachi.
9. Theoretical Chemistry Symposium 2006 organised by School of Chemistry, Bharathidasan University, Tiruchirapalli during 11-13 December 2006.
10. Workshop on “Latex-The Document Preparation System ” organised by the Department of Mathematics & Physics, NGM College, Pollachi held on 25th October 2005.
11. National Seminar on “Lasers in Technological and Biomedical Applications” organised by the Department of Physics, ST Joseph’s College, Tiruchirapalli during 27-28 January 2005.
12. National Seminar on “VHDL Tools for VLSI Design” organised by the Department of Physics, PSG College of Arts and Science, Coimbatore during 18th & 19th September 2003.
13. State Level One day Seminar on “Recent Developments in Physics and Communication” organised by the Department of Physics, Maharaja College for Women, Perundurai during on 28th January 2003.
14. UGC Sponsored Seminar on “Natural Background Radiation” organised by the Department of Physics, Bharathiar University, Coimbatore held on 30th March 2001.

Participation in Faculty Development Programme

1. Refresher Course in Physics conducted by UGC-HRDC, Bharathiar University, Coimbatore from 23rd November to 13th December 2018.
2. Faculty Development Programme on “Man Making Education” Organised by Swami Vivekananda Study circle, Kongunadu Arts and Science College, Coimbatore on 4th March 2015.
3. Refresher Course in Physics conducted by UGC-Academic Staff College, Bharathiar University, Coimbatore during 03-23 December 2014.
4. Refresher Course in Nano Sciences conducted by UGC-Academic Staff College, Bharathiar University, Coimbatore during 01-21 December 2011.
5. 84th Orientation Course conducted by UGC-Academic Staff College, Bharathiar University, Coimbatore from 07th May to 03rd June 2010.
6. Personality development course organized by the Department of Human Excellence, NGM College, Pollachi from 24-26 September 2006 held at Temple of Consiousness, Arutperumjothi Nagar, Aliyar.
7. Faculty Improvement Programme on “Classroom Climate” jointly organised by the Department of Commerce, NGM College and UGC–Academic Staff College, Bharathiar University, Coimbatore on 2nd April 2005 at NGM College, Pollachi.

Participation in Extension Programme

Extension Programme on “Skills Conclave- - Interaction with Sector Skill Councils” organized by the Department of Extension and Career Guidance, Bharathiar University, Coimbatore on 16th March 2015.

Other Activities

Acted as Internal Quality Auditor in ISO at NGM College from 2004 to 2016.