

PROFILE

Dr. P.P. KANNAN

Door no: 110, Chinnakanmai Main Street
Munichalai Road
Madurai- 625009
Tamilnadu.
Mobile no : 09629770005

E mail: kannan@mannercollege.com,
kannanphdphysics@gmail.com



Education

Degree/ Examination	Year of Passing	School/Institute	Board/University	Percentage/Grade
Ph. D Physics.,	2020	Thiagarajar College, Madurai – 625009.	Madurai Kamaraj University, Madurai	----
M. Sc Physics.,	2013	Thiagarajar College, Madurai – 625009.	Madurai Kamaraj University, Madurai	75.32%
B. Sc Physics.,	2011	Sourashtra College, Madurai – 625004.	Madurai Kamaraj University, Madurai	74.38%
Class XII	2008	Sourashtra Boys Hr. Sec School, Madurai – 09.	State Board	64.25%
Class X	2006	Sourashtra Boys Hr. Sec School, Madurai – 09.	State Board	77.60%

Research experience

2013 – 2019 Ph.D (Full time) scholar - Department of Physics, Thiagarajar College,
Madurai- 625009.

Research Interests

Chemical Physics - Dielectric Studies using Time Domain Reflectometry (TDR) technique, Dipolemoment studies, Fourier Transform Infra-Red (FTIR) spectroscopy, Nuclear Magnetic Resonance (NMR) spectroscopy, Ultra Violet (UV) - visible spectroscopy, Density Functional Theory (DFT) calculations.

Research Publications

1. **P.P. Kannan**, N. K. Karthick, T. Sangeetha, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*FTIR studies and DFT calculations on the associative nature of methyl cellosolve in binary solutions with acetonitrile*” *Journal of Molecular Structure*, 1227 (2021) 129572.
2. **P.P. Kannan**, N. K. Karthick, G. Arivazhagan, “*Hydrogen bond interactions in the binary solutions of formamide with methanol: FTIR spectroscopic and theoretical studies*” *Spectrochimica Acta Part A*: 229 (2020) 117892 (1-8).
3. **P.P. Kannan**, G. Arivazhagan, T. Sangeetha, N. K. Karthick, A.C. Kumbharkhane, “*FTIR Studies, DFT calculations and time domain reflectometry studies on tetrahydrofuran - methanol binary solutions*” *Spectrochimica Acta Part A*: 222 (2019) 117162 (1-8).
4. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, A.C. Kumbharkhane, Y.S. Joshi, G. Arivazhagan, “*FTIR spectroscopy, quantum chemical calculations and time domain reflectometry studies on the behavior of methanol molecules in the environment of dibutyl ether*” *Journal of Molecular Structure*, 1183 (2019) 60-69.
5. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Red / blue shifting hydrogen bonds in acetonitrile- dimethyl sulphoxide solutions : FTIR and theoretical studies*”, *Journal of Molecular Structure* 1139 (2017) 196 – 201.
6. **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Corrigendum to Red / blue shifting hydrogen bonds in acetonitrile- dimethyl sulphoxide solutions : FTIR and theoretical studies*”, *Journal of Molecular Structure* 1149 (2017) 812 – 817.

7. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, “*FTIR spectroscopic studies and DFT calculations on the binary solution of methyl acetate with m-xylene*” *Journal of Molecular Liquids*, 313 (2020) 113491 (1-8).
8. T. Sangeetha, **P.P. Kannan**, N. K. Karthick, A. Mahendraprabu, G. Arivazhagan, “*Classical/non-classical hydrogen bonds in m-xylene - ethanol solution: FTIR and theoretical approach*” *Journal of Molecular Liquids*, 312 (2020) 113406 (1-8).
9. A. Mahendraprabu, T. Sangeetha, **P.P. Kannan**, N. K. Karthick, A.C. Kumbharkhane, G. Arivazhagan, “*Hydrogen bond interactions of ethyl acetate with methyl Cellosolve: FTIR spectroscopic and dielectric relaxation studies*” *Journal of Molecular Liquids*, 301 (2020) 112490 (1-5).
10. A. Mahendraprabu, N. K. Karthick, **P.P. Kannan**, T. Sangeetha, A.C. Kumbharkhane, G. Arivazhagan, “*Molecular interactions in the binary solutions of methyl cellosolve with chlorobenzene: Spectroscopic and dielectric studies*” *Journal of Molecular Structure*, 1205 (2020) 127565 (1-7).
11. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A.C. Kumbharkhane, Y.S. Joshi, “*Homo/heterointeractions in the binary solutions of toluene with acetonitrile: FTIR spectroscopic, theoretical and dielectric studies*” *Journal of Molecular Structure*, 1192 (2019) 208 – 216.
12. V. Ramalakshmi, **P.P. Kannan**, A. Mahendraprabu, U. Sankar, “*Dielectric relaxation studies on diethanolamine and triethanolamine with N,N – Dimethylformamide using time domain reflectometry technique*” , *Journal of Analysis and Computations* 13 (2019) 41 – 47.
13. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A. Mahendraprabu, “*FTIR spectral studies and dielectric relaxation studies on binary solutions of ethyl acetate and bromobenzene*” *Indian Journal of Pure & Applied Physics* 56 (2018) 261-264.
14. N.K. Karthick, G. Arivazhagan, **P.P. Kannan**, A. Mahendraprabu, A.C. Kumbharkhane, S.S. Shaikh, Y.S. Joshi, “*Hydrogen bond interactions in the binary solutions of ethyl acetate with nitrobenzene: Spectroscopic, theoretical and dielectric studies*”, *Journal of Molecular Liquids* 251 (2018) 385 – 393.

- 15 M. Vigneswaran, **P.P. Kannan**, “*Investigation of hydrogen bond interactions between propionic acid and acetonitrile/acetone using spectroscopic techniques*” , Journal of Analysis and Computations 11 (2018) 1 – 5.
- 16 N.K. Karthick, **P.P. Kannan**, A. Mahendraprabu, G. Arivazhagan, N. Suganya, “*Spectroscopic studies on the binary solutions of ethanol with 1,4- dioxane*”, Journal of Molecular Liquids 232 (2017) 147 – 151.
- 17 A. Mahendraprabu, A.C. Kumbharkhane, Y.S. Joshi, S.S. Shaikh, **P.P. Kannan**, N.K. Karthick, G. Arivazhagan, “*Spectroscopic and time domain reflectometry studies on acetonitrile – ethylene glycol binary solutions*”, Journal of Molecular Structure 1136 (2017) 303 – 308.
- 18 Deepali L. Jadhav, N.K. Karthick, **P.P. Kannan**, R. Shanmugam, A. Elangovan, G. Arivazhagan, “*Molecular interaction forces in acetone + ethanol binary liquid solutions: FTIR and theoretical studies*”, Journal of Molecular Structure 1130 (2017) 497 – 502.
- 19 N.K. Karthick, G. Arivazhagan, A.C. Kumbharkhane, Y.S. Joshi, **P.P. Kannan**, “*Time domain reflectometric study on toluene + propionitrile binary mixture*”, Physics and Chemistry of Liquids 54 (6) (2016) 779 – 785.
- 20 N.K. Karthick, G. Arivazhagan, A.C. Kumbharkhane, Y.S. Joshi, **P.P. Kannan**, “*Time Domain Reflectometric and spectroscopic studies on toluene + butyronitrile solution*”, Journal of Molecular Structure 1108 (2016) 203 – 208.
- 21 G. Arivazhagan, A. Elangovan, R. Shanmugam, R. Vijayalakshmi, **P.P. Kannan**, “*Spectroscopic studies, NBO analysis and dielectric studies on the behaviour of acetone molecules in non-polar solvent environment*” Chemical Physics Letters 627 (2015) 101 – 106.

Papers presented in conferences / seminars

1. **P.P. Kannan**, G. Arivazhagan, “*FTIR and ¹³C NMR Spectroscopic studies on the binary solutions of methanol with N,N- dimethylformamide*”, abstract published in the proceedings and **won the first prize for paper presentation** of the “**National Seminar on Advanced Materials**”, organized by the PG & Research Department of Physics, Jamal Mohamed College, Tiruchirappalli, Tamilnadu , India on 23rd January 2020.

- 2 **P.P. Kannan**, T. Sangeetha, G. Arivazhagan, A.C. Kumbharkhane, “*Molecular interaction forces in liquid solutions of dibutyl ether with N,N-dimethylformamide – time domain reflectometric technique, FTIR spectroscopy and DFT calculations*”, paper published in the proceedings of the “ **International Conference on Emerging Trends and Challenges**”, organized by the Science Department, NPR Arts & Science College, Natham, Dindigul, Tamilnadu, India during December 28, 2018.
- 3 **P.P. Kannan**, G. Arivazhagan, A.C. Kumbharkhane, “*Spectroscopic (FTIR, ¹³C NMR) and time domain reflectometry studies on the binary solutions of tetrahydrofuran with methanol*”, abstract published in the proceedings of the “**National Conference on Dielectric Relaxation and Spectroscopic Techniques**”, organized by the School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra, India during December 14 – 15, 2017.
- 4 **P.P. Kannan**, G. Arivazhagan , A. C. Kumbharkhane, “*Inter/intramolecular forces in solutions of dibutyl ether with N, N-dimethylformamide - time domain reflectometric technique, FTIR spectroscopy and DFT calculations*”, abstract published in the proceedings of the “ **International Conference on Recent Advances in Applied Physics**”, organized by the Engineering Physics Section, Faculty of Engineering and Technology, Annamalai University, Annamalai Nagar, Tamilnadu, India during September 21 – 22, 2017.
- 5 **P.P. Kannan**, N.K. Karthick, A. Mahendraprabu, G. Arivazhagan, “*Homomolecular and heteromolecular interactions in the binary solutions of methyl acrylate with dibutyl ether: Vibrational spectroscopic studies (FTIR) and quantum chemical calculations*”, abstract published in the proceedings of the National Level Seminar on “**Recent Advancements in Materials**”, organized by the PG and Research Department of Physics, Jamal Mohamed College, Tiruchirappalli, Tamilnadu , India on 15th February 2017.
- 6 **P.P. Kannan**, G. Arivazhagan, N.K. Karthick, “*Inter and Intra molecular interaction between methyl cellosolve and acetonitrile / formamide by using spectroscopic studies*”- abstract published in the proceedings of the “**II International Conference on Recent Trends in Materials**”, organized by the Department of Physics, Devanga Arts College, Aruppukottai, Virudhunagar, Tamilnadu, India during January 22 – 23, 2016.

Details of conferences/ seminars/ workshops Participated in various institutions

Date	Event	Venue
Feb 14, 2014	National level seminar on “Emerging Technology in Physics”	V.V.Vanniaperumal College for Women- Virudhunagar
Feb 20, 2014	State level seminar on “Recent Trends in Solar technology”	American College- Madurai
Feb 22, 2014	One day national seminar on Nanomaterials Research- VISION NANO 2014	Sri Ramakrishna Engineering College- Coimbatore
March 20 and 21, 2014	International Workshop on Advanced Materials- IWAM	Alagappa University- Karaikudi
July 17 and 18, 2014	National Conference on Optics, Photonics and Lasers – NCOPL-14	Arul Anandar College- Madurai
Sept 12 and 13, 2014	HORIZON-14- “National Level Symposium on Biomimetics and Molecular Modelling”	National Institute of Technology- Trichurappalli
Sept 21, 2014	State level seminar on “Current Trends in Physics”	Zakir Husain College- Ilayankudi
Aug 14, 2015	National level seminar on “Recent Trends in Energy Technologies”	American College- Madurai
Nov 5 and 6, 2015	TEQIP II Sponsored Workshop on “Physics in Engineering (PIE)”	Thiagarajar College of Engineering- Madurai
Feb 24, 2016	State level seminar on “Recent Advancement in Material Synthesis”	Syed Hameedha Arts and Science College- Kilakarai
June 30 and July 01, 2016	Workshop on “Corrosion and its Control”	PSGR Krishnammal College for Women- Coimbatore
Jan 05 and 06, 2017	Science Academics Lecture Workshop on “Scope of Nonlinear Physics”	Fatima College, Madurai

Technical skills

MS Word, MS Excel, PowerPoint, Origin, Photoshop