

CURRICULAM VITAE

Johnson Irudayaraj

Associate Professor (Physics)

Head (Electronics)

St. Joseph's college,
Tiruchirappalli- 620002.

E-mail: jnaadarsh@hotmail.com

Mobile: 9442904820



Fields of Research Interest

Ultrasonics

Chemical physics

Material science

Nanotechnology

Educational Degrees

Post-Doctoral Fellow(Materials science) --- European Union , University of Coimbra--- 2005 to 2006

Ph.D(Chemical physics). --- Bharathidasan university --- 2000 to 2004

--- Highly commended

M.Phil Physics (specialization in solid state physics) --- St. Joseph's college, Bharathidasan university--- (1989 to 1990)

M.Sc. Specialization with Electronics-- St. Joseph's college, Bharathidasan university --- (1987 to 1989)

Present position

Associate professor Department of physics, St. Joseph's college, Bharathidasan university, Trichy-620002

Head of the department Department of Electronics, St. Joseph's college, Trichy- 620002

Professional experience

Academic - 27 years

Research - 18 years

Member of Professional / Technical Committees/ scientific bodies

E.C. Member (2009) and life fellow (2013) --- ASI, New Delhi.

Life fellow (2014) by USI, New Delhi.

Former member of American chemical society.

Joint secretary, Acoustical society of India, New Delhi

Administrative Positions Held

DST- FIST (Co-Ordinator) ----- (2009 to 2014).

St. Joseph's college – Staff Association, Former E.C Member.

Former Physics Association President (2 times).

President of Acoustical Society of India, Trichy Chapter.

Reviewer of journals

1. Journal of pure and Applied ultrasonics.
2. Journal of Acoustical society of India.
3. International Journal of Thermo physics.
4. Journal of Molecular liquids

List of publications

International Journal papers

“Facile sonication – Assisted Synthesis and Characterisation of Silica decorated graphene nanocomposites”. IET Micro & Nano letters, Vol.NO 13 (6) pp. 845-848. (2018)

“ ultrasonic study on *moringa olifera* solution before and after laser exposure”. International journal for research, vol.No 4 pp. 607-611, (2017)

“ultrasonic assisted production of biodiesel from sun flower oil using CuO: Mg heterogeneous Nano catalyst”. IOP Conf. series: Materials science and engineering, (2017)

“Green synthesis and characterisation of flower shaped CuO Nanoparticles for biodiesel applications”. Sensor & transducer, Vol.No 210 (3) pp: 38-41, (2017)

“synthesis and characterisation of needle shaped CuO Nanoparticles for biodiesel applications”, International journal of advanced research, Vol. no. 1 pp: 1642- 1648, (2017)

“Ultrasonication-assisted Transesterification for Biodiesel Production by Using Heterogeneous ZnO Nano catalyst”, Environmental Progress & Sustainable Energy, John Wiely , AIChE, vol.no : DOI 10.1002/ep.12770, (2017)

“Optical studies of CuO Nanoparticles using *Catharanthus Roseus* Plant leaves”, International journal of chemical concepts.

Vol.no 2(1) PP. : 43-49

(2017)

“Natural dye sensitized CuO Nanorods for luminescence applications CERAMIC INTERNATIONAL, Elsevier”, Vol.no 42. (5) pp:6198-6205,

(2017)

“Flower shaped CuO Nanostructure synthesized by sono chemical method and the effect of NaOH concentration”, International journals of advanced research. Vol no. 3(8)pp: 2320-5407. (2015)

“ Plant leaf extract mediated green synthesis and characterization of laser induced bio- nanoparticles and their catalytic applications proceeding of international conference on nanostructured polymeric materials and polymer nanocomposites,” mahatma Gandhi university, kerala, . (2015)

“ Greener chemical synthesis and characterization of Mg doped ZnS nanoparticles and their engineering band gap performance”, International Journal of Engineering Research and Applications. Vol. 5(8)

pp: 99-105, (2015)

“Green Synthesis of Silver nano particles using *Aloe Vera* (*Aloe barbadensis*) Extract ” Proceedings of International Conference on Smart Materials 2015 vol.no. pp: 24, (2015)

“Studies on Optical and Structural properties of ZnO: Mn Thin films By Spray Pyrolysis method” Proceedings of International Conference on Smart Materials 2015. pp: 25. (2015)

“PL studies on NiO nanoflakes using natural *Tabernaemontana Divaricata* plant Leaves”.International Journal of ChemTech Research. Vol.8(9) pp: 316-321, (2015)

“Antibacterial Activity of Silver Nanoparticles Synthesized from Plant Leaf Extract of *Cycas circinalis*, *Ficus Amplissima*, *Commelinabenghalensis* and *Lippianodiflora* Leaves”.vol. 7(9) pp: 443-449

Journal of Chemical and Pharmaceutical Research, (2015)

- “Hydrothermal Synthesis of ZnO Nano-Honeycomb Structures and their Activity against Pathogenic Bacteria”.
International Journal of PharmTech Research vol. 8(6), (2015)
- “Eco-Friendly Electrochemical Synthesis of Rod Shaped Ag Nanostructures for Battery Application”. International Journal of ChemTech Research vol.no 8(7). (2015)
- “Green synthesis and characterization of CuO nano catalysts in biodiesel production”. Proceedings of International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites, Mahatma Gandhi University, Kerala, (2015)
- “Synthesis and characterization of Mg doped CuO nanoparticles by quick precipitation method”. Proceedings of International Conference on advances in Chemical Engineering (ICACE), (2015)
- “Preparation, Characterization and Chemical Sensing Behaviour of Polyaniline Thin Films” International Journal of Nanotechnology and Applications. Vol.no 9(1) pp: 1-7, (2015)
- “Ultrasonic study on Coconut water and sugar solution before and after Laser exposure” IOSR Journal of Applied Physics.vol.no: 7(2) pp: 151-152, (2015)
- “ Green synthesis and characterization of silver nanoparticles by leaf extracts of *Cycas cardinals*, *Ficus amplissima*, *Commelina benghalensis* and *Lippia nodiflora* “ International Nano Letters, Springer.vol.no:5 pp: 43-51, (2015)
- “ Estimation of vitamin content in fruit juices by Ultrasonic technique”. International journal of Engineering science Invention.vol.no: 5 pp: 43-51, (2015)
- “Plant-mediated biosynthesis and characterization of silver nanoparticles by leaf extracts of *Tragiainvolucrata*, *Cymbopogon citronella*, *Solanumverbascifolium* and *Tylophora ovata*” Karbala International Journal of Modern Science, Elseveir .vol.no: 1(4) pp: 237-246, (2015)
- “ Estimation of mineral content in vegetable extraction by Ultrasonic technique”.International journal of Engineering science Invention. Vol.no: 3(4) pp: 20-23, (2015)
- “ Ultrasonic Study on Bio-Liquids Before and After Sonication”.International Journal of scientific research, vol.no: 3(9) pp: 443-444. (2014)

- “Growth and characterization of pure ADP crystals with and without the influence of Ultrasound”. International Journal of Engineering and Technical Research vol.no: 2(8) pp: 140-142, (2014)
- “Ultrasonic study on the mixture of *Gymnemasylvestre* and sugar solution”. International Journal of Pharmaceutical Science Invention vol.no 3(9) pp: 29-30, (2014)
- “Induced Nano crystallization of Dextrose monohydrate International Journal of Nano Science”, World scientific vol.no :12(3) pp: 312-316, (2013)
- “Green Synthesis of nano particles by medicinal plants Proceedings of First International translational nano medicine conference”, North eastern university (IT Nano 2013), Boston. M.A.U.S.A.vol.no: 1 pp: 49-50, (2013)
- “Ultrasound tailoring of industrially important nano particles”. International Journal of Scientific Research Engineering and Technology vol.no: 2(2) pp: 56-59, (2013)
- “Tailoring of CdSe Nanoparticles by different Techniques.” International Journal of Scientific research vol no: 2(6) pp: 524-525, (2013)
- “Characterisation of vanadia doped titania nano thin film using acoustical and other techniques”. Proceedings of Acoustics 2012, Nantes, FRANCE vol.no: 000232 pp: 3, (2012)
- “Designing ultrasound generator for induced (nano) crystallization”. Proceedings of Acoustics 2012, Nantes, FRANCE vol.no : 00261 pp: 19, (2012)
- “Non linear spectroscopy with X-rays in some complex liquid Interactions”. Proceedings of International Atom 2012, MAX PLANK, GERMANY vol.no: 2 pp: 135, (2012)
- “Characterisation of Vanadia doped Titanium Oxide nano thin films”, Proceedings of WORKSHOP ON OXIDE ELECTRONICS, Netherlands vol.no:1 pp: 119, (2012)
- “Dichloromethane: Revision and extension of pqT relationships for the liquid .” The Journal of Chemical thermodynamics, Elsevier vol.no: 43(2) pp: 105-116, (2011)
- “Pressure Volume Temperature measurements of Phosponium based ionic liquids and Analysis with simple equations of state”

The Journal of Chemical thermodynamics, Elsevier vol.no: 43(6) pp: 914-929, (2011)

“ Thermodynamic characterization of Ti-15 at%Nb alloy by drop calorimetry”. Proceedings of 19th European conference on Thermophysical properties, Greece vol.no : 1, (2011)

“ Thermodynamics of α - β Phase transformation and heat capacity measurements in Ti-15 at.% Nb alloy
Physica B : Condensed matter, Elsevier .” vol.no : 406(22) pp: 4200-4209, (2011)

“ Preparation and characterization of some nano particles using ionic liquids”. Proceedings of International conference on Synthesis, characterization, consolidation and modeling of nano materials (ICON 2010) vol.no : 1 pp: 71-76, (2010)

“ Enthalpy measurements on Titanium 20 atomic percent Niobium alloy.” Proceedings of The International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering - ISRS vol.no : 1,(2010)

“ PVT, Viscosity and Surface tension of ethanol : New measurements and literature data evaluation”. The Journal of Chemical thermodynamics, Elsevier vol.no :42(8) pp: 1039-1049, (2010)

“ Nanocatalytic effect in Gold/Tin functionalized tin oxide nanowires forenhanced cosensing “. Proceedings of International conference on Nanoscience and Nanotechnology (ICONN), 2010, IEEEExplore, Singapore vol.no : 1 pp: 49-50, (2010)

“ Liquid-Liquid Equilibria, Density, Viscosity, and Surface and Interfacial Tension of the System Water + n-Butyl Acetate + 1-Propanol at 323.15 K and Atmospheric Pressure” Journal of Chemical and Engineering Data U.S.A, ACS vol.no : 54(10) pp: 2845-2854, (2009)

“ PVT property Measurements for Ethyl Propionate, Ethyl Butyrate and Ethyl Pentanoate Esters from 298 to 393 K and up to 35 MPa”. Journal of Chemical and Engineering Data U.S.A, ACS vol.no : 54(2) pp: 256-262, (2009)

“ A Study of Nitrogen sputtered Nano thin films in Argon and Nitrogen atm.” Proceedings of the International Symposium for Research Scholars on Metallurgy, Materials science and Engineering, Indian Institute of Technology, Chennai vol.no : pp: 68, (2008)

“ Density, Viscosity, Surface Tension and Interfacial tension of the system Water + n -Butyl acetate + 1-Propanol at 303.15 K and Atmospheric pressure”. International Journal of thermophysics, Springer vol.no :29(2) pp: 619-633, (2008)

“ Liquid- Liquid Equilibria, Surface and Interfacial Tension for Water+N -Butyl acetate+1-Propanol at 323.15 K”. Proceedings of CHEMPOR 2008, Braga, Portugal vol.no. 1 (2008)

“ Kinetics of HCP to BCC Phase Change in pure titanium : Effect of heating and cooling rates on transformation asymmetry”.

Proceedings of the International Symposium for Research Scholars on Metallurgy, Materials science and Engineering vol.no . MP-P4 pp: 71, (2008)

“ PVT Property measurements for some Aliphatic Esters from (298 to 393) K and up to 35 MPa.” Journal of Chemical and Engineering Data U.S.A, ACS vol.no: MP-P4, (2007)

“ Surface Tension measurements of some ternary mixtures Proceedings of the 8th Congress of Physical-Chemistry of the Portuguese Chemical Society.” vol.no: 52, (2007)

“ Acoustical, Optical and Thermodynamical Investigation of Ternary mixtures of cyclohexanone + heptane + hexane using an ultrasonic technique.” Proceedings of 19th International Congress on Acoustics, 2007, Madrid, Spain vol.no:1, (2007)

“ Surface tension and Interfacial tension of some organic liquid mixtures.” Proceedings of the European Symposium on Applied Thermodynamics, ESAT, 2006, DENMARK vol.no:1, (2006)

“ Spectroscopic confirmation of excess volume studies of 2E-E + DMSO at 308.15 K.” Proceedings of the International conference on Spectro Physics vol.no: 1, (2005)

Irudayaraj Johnson., Murugesan Kalidoss and Raghavachariar Srinivasamoorthy, Density, Viscosity and speed of sound in the ternary mixtures of 2-Ethoxy ethanol + N,N, DMFA + DMAc and 2-E-E + DMSO + DMAc at 308.15 K, Journal of Chemical and Engineering Data U.S.A , 47, 1388-1390, (2002)

Evaluation of Physico – chemical parameters of Ethenyl benzene + DMSO + DMFA Using an acoustic method , Acoustics Letters (U.K.), 24, 210-217, (2001)

“Acoustical investigation of some ternary organic liquid mixtures” Proceedings of the International Congress on Acoustics, ROME, ITALY vol.no:1, (2001)

National Journal papers

(2018) “ A simple sonication-assisted exfoliation and characterization of few layered graphene nanosheets”. Journal of Pure and Applied Ultrasonics vol.no :40(1) pp: 22-25

(2013) “ Kinetics of Thermally Activated Lattice Softening in Titanium: A Dynamic Calorimetry Study”. Transactions of the Indian Institute of Metals, Springer vol.no : 66(4) pp: 415-418

(2012) “ Thermodynamic study on Binary mixture of DMSO + Benzaldehyde .”Journal of Acoustical Society of India vol.no :39(2) pp: 103-107

(2010) “ Ultrasonic & Spectroscopic Studies of Binary Mixtures Ethyl Acetate + 2-Butanone & Ethyl Acetate + Hexane”. Journal of Acoustical Society of India. vol.no : 37(4) pp: 65-69

(2010) “ Ultrasonic and Spectroscopic Studies of Ternary Mixture Ethyl Acetate + 2-Butanone + Hexane.” Journal of Acoustical Society of India vol.no :37(1) pp: 33-36

(2010) “ Ultrasonic & Spectroscopic Studies of Binary Mixtures Benzaldehyde + Benzyl Chloride Benzyl chloride + Chloride + 2-Butanone”. Journal of Acoustical Society of India vol.no :37(1) pp: 15-19

(2010) “Evaluation Thermo Acoustical Parameters Of Some Binary Mixtures From Volume Expansivity Data”. Journal of Acoustical Society of India vol.no :37(4) pp: 161-168

(2010) “Study Of Thermodynamical And Excess Parameters Of Binary And Ternary Mixtures By Having Propanol As Common Component”. Journal of the Acoustical Society Of India, vol.no :37(3) pp:105-111

(2006) “Spectroscopic and ultrasonic studies of some binary mixtures .” Journal of Pure and Applied Ultrasonics vol.no :3 pp:

(2005) “Derivation of a new equation to determine the internal pressure of liquids in terms of non-linear acoustical parameter and experimental confirmation” ,Journal of Acoustical Society of India vol.no :33 pp: 268-271

(2003) “Evaluation of thermo-acoustic parameters of some binary mixtures from volume expansivity data, Journal of Pure and Applied Ultrasonics, 2003, 25(4), 136-142”. Journal of Pure and Applied Ultrasonics vol.no :25(4) pp:136-142

(2002) “Evaluation of thermodynamical parameters of ternary mixtures of 2-Ethoxy ethanol + DMSO + DMFA at 308.15 K”.
Journal of Acoustical Society of India vol.no :30 pp:32-37

(2002) “Thermo-acoustic parameters of the 2-Ethoxy ethanol + DMSO/DMF mixtures from volume expansivity data”. Journal of Acoustical Society of India vol.no :28 pp:347-350

(1999) Ultrasonic study of Binary Mixture of Glycerol Vol.I,,”
Journal of Acoustical Society of India vol.no :1

Publications of Books

Book Title	Publisher	Edition	ISBN	Year
Molecular interactions and Thermodynamics	Scholars press, Germany	1	978-3-639-66022	2014
Synthesis and Characterization of Mg Doped CuO Nano Particles by Quick Precipitation Method	Springer Nature (Book chapter)	1	978-981-10-2675	2017

Seminars (S) / Conferences (C) /Workshops (WS) attended and the source of funding (National (N) / International (IN)) with details of outstanding participants, if any

Title	Type	Organization Name	Place	Days	Date
National Symposium on Acoustics	N	Mepco Schlenk Engineering	-Virudhu Nagar,	2	1999-09-23

		College,	Tamilnadu		
INTERNATIONAL CONFERENCE and EXHIBITION on ULTRASONICS	I	National Physical Laboratory	NEW DELHI	3	1999-12-02
National Symposium on Acoustics	N	St. Joseph's college	TRICHY	2	2000-11-22
National Symposium on Ultrasonics	N	Osmania University, Hyderabad	Andra pradesh, India	2	2001-03-15
17th INTERNATIONAL CONGRESS ON ACOUSTICS	I	Associazione Italiana di acustica and International Commission for Acoustics	University of ROME, ITALY	8	2001-09-02
National Symposium on Acoustics	N	Aligarh Muslim University	ALIGARH, India	3	2002-10-22
National Symposium on Chemical Physics	N	Annamalai University Annamalai Nagar.	Annamalai Nagar.	2	2003-03-10
National Symposium on Acoustics	N	Automotive Research Association of India, PUNE	PUNE	3	2004-10-30
International Conference on Spectro Physics	I	Indian Spectro Physics Association, Pachaiyappa's college	Chennai	2	2005-05-12
National Symposium on Ultrasonics	N	Cochin University of science and technology	CUSAT, KERALA	2	2007-12-18
Trends in Nano Technology Seminar Series	I	NMS International	San sebastin, SPAIN	3	2007-09-10
19th International Congress on Acoustics	I	International commission for Acoustics and Spanish acoustical	Madrid, SPAIN	6	2007-09-02

		society			
International ATOM - 2012	I	MPIPKS (Max Plank)	GERMANY	10	2012-11-26
WORKSHOP ON OXIDE ELECTRONICS	I	Oxide International, Paleist Loo	Apeldoorn, Netherlands	5	2012-09-30
16th Anglo-French Physical Acoustics Conference (AFPAC)	I	Institute of Physics (UK) and Society of French Acoustics	LMA, CNRS, Marseille	3	2017-01-23

Resource Person: (Special Lectures / Workshops / Seminars / Association Activities/ Alumni Meeting)

Type of Programme	Title	Beneficiaries	Days	Date
International University seminar session	Material science	Doctoral and Post doctoral researchers in Spain, University of Zaragoza	15	2007-09-10
National (NSTL, DRDO, VIZAG)	Acoustics (NSA- 2008)	Research scholars and scientists in Physical acous	1	2008-12-18
National (RCI, DRDO, Hyderabad)	Acoustics NSA-2009	Research scholars and scientists in Physical acous	3	2009-12-16
National (Rishikesh)	Acoustics NSA-2010	Research scholars and scientists in Physical acous	3	2010-11-14
National (Jhansi)	Acoustics NSA-2011	Research scholars and scientists in Physical acous	3	2011-11-18
International (USA)	APS Lecture series	Professors and Research Scholars, Utah State University, USA	3	2012

International, Belgium	Synthesis and characterization of Nano thin films using acoustical and other techniques	Doctoral, Post doctoral researchers and Professors University of Leuven	7	2012- 10-20
International, Germany	Non linear spectroscopy and acoustic techniques at atomic level	Scientists and Doctoral researchers Max Planck, Dresden	7	2012- 11-04
International, Initiative seminar sessions, Sweden	Material science (Formation of Nano crystals)	Researchers and new entrants	2	2012- 11-30
Indo-French, International, NPL, New Delhi	Acoustics 2013	Researchers, Academicians and Industrialists	5	2013- 11-10
Indo-UK International Net working panel, Chennai	Nano materials for Energy	Academicians and Researchers	3	2013- 12-16

Research projects from National (N) / International (IN), funding agencies

Title of the Project	Type	Status	Finding Agency	Duration	Amount in Rupees	Year
Synthesis and characterisation of Nano materials	MA	C	UGC		6,50,000	2010
Design of density meter and analysis of bio liquids	MI	C	UGC		1,00,000	2007
Evaluation of Physico- chemical parameters of energetic ionic liquids	MA	C	DRDO		3,50,000	2008
Ultrasound induced Nano crystallization	MA	C	CSIR		9,50,000	2010

Conferences / Workshops organised :

Convenor --- National workshop on Applications of Radiation and radio isotopes --- organised in collaboration with IGCAR, Kalpakkam, 2007

Convenor --- Indo-US workshop on Nanosonics and Ultrasonics and International conference on Nanotechnology and ultrasound organised in collaboration with U.S. Scientists. ---- January, 2011

Thesis Guided

PhD thesis completed : 6 candidates

Ongoing : 2 candidates

M.Phil. completed : 30 candidates

Awards received

Awarded “National Merit Scholarship by Ministry of Education and Culture, Govt. of India. --- (1982 to 1987)

Awarded “Prof. P.E. Subramanian Iyer Medal” by St. Joseph’s college. (1988)

Awarded “Rev.Fr. Sewell Medal” by St. Joseph’s college.(1989)

Awarded “Dr. Srinivasamoorthy best paper awards (2004 to 2011)” by St. Joseph`s college.

Awarded “Travel grant awards to present paper at ICA 2001” by International commission for Acoustics and UNESCO.

Awarded “Post-doctoral fellowship (2005-06)” by European Union (Portugal and France).

Awarded “Visiting Scientist award, 2007” by Spain Government and U.G.C. (India).

Awarded “INDO-US Professorship award” 2011 by American Physical Society.

Awarded “EM Nano award (2012 - 13)” by European Union (Belgium, Germany, Netherlands, Sweden).

Awarded “Best paper award for Ph.D. student, 2010” by Indian Thermal Analysis society.

Awarded “Best Paper Awards for Ph.D. students, (2009 & 2010)” by Acoustical society of America and Acoustical Society of India, Joint meeting.

Awarded “Bharat Jyoti” 2012 by IIFS.

Awarded “Best ASI Local Chapter (President)” 2013 by Acoustical society of India.

Awarded “Visiting Research Fellowship” for the position --- Co-ordinator, 2016 to 2017 Engineering systems of Energy, INSA, France, Research Project, Germany.