



Propagation

Department of Physics @ CUTN

Newsletter

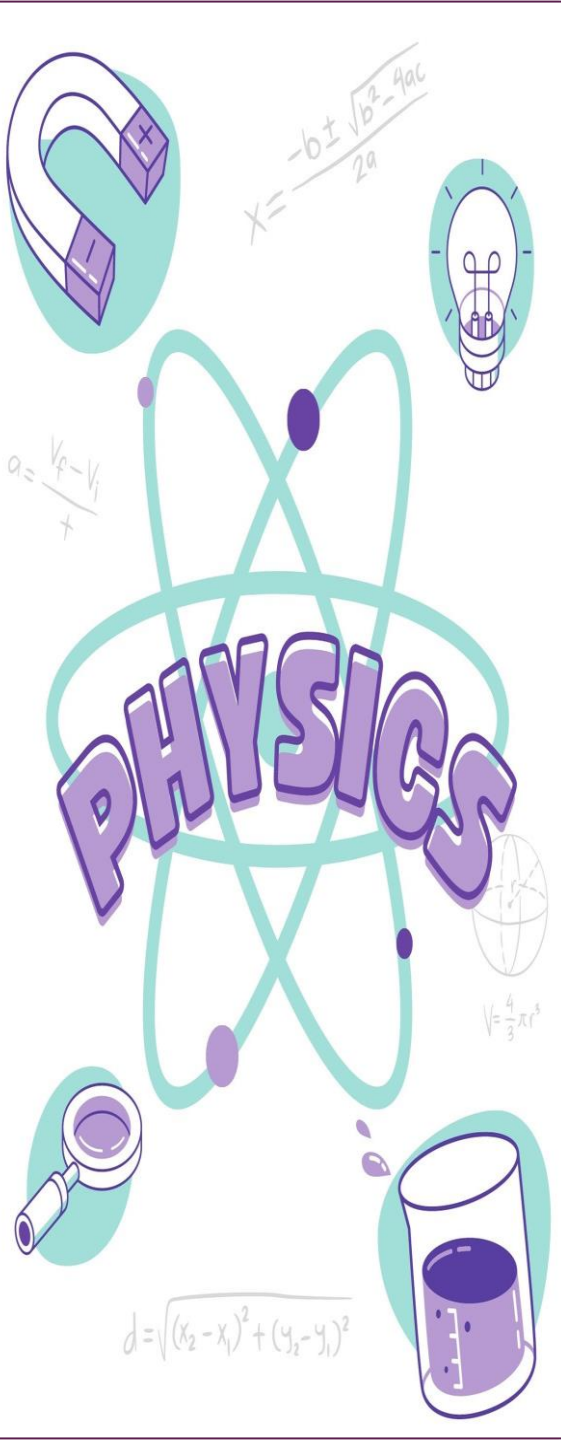
Published by

Department of Physics
Central University of Tamil
Nadu,
Neelakudi,
Thiruvarur - 610 005

July 2017 to June 2018

Editor : Prof. Dr. L. Kavitha

Volume: 01 Issue : 01





Newsletter

Propagation



July 2017 to June 2018

**Year of Establishment
2009**

Department of Physics

Professors

Prof. Dr. P. Ravindran
Prof. Dr. V. Madhurima
Prof. Dr. L. Kavitha (Head)

Assistant Professors

Dr. M. Ponmurugan
Dr. R. Arun
Dr. Venkata Saravanan

UGC-Assistant Professor

Dr. K. C. Shekhar

Assistant Professors (Contract)

Dr. A. Karthik
Dr. O. Prakash
Dr. K. Saranya
Dr. Gayathree Mohan
Dr. R. Murugan
Dr. M. Dhavamurthy
Dr. S. Krishnaraj
Dr. Micheal SL Shanthi

Technical & Administrative Staff

Mr. A. Sulthan Ibrahim
Mr. R. Dhanaraj
Mr. M. Lakshmana Prabhu
Mr. Thirumeninathan
Ms. Karthika
Mr. A. Vasudhevan

I-MSc Students - 146
PhD Scholars - 29

2017-2018

Total Project
Funds Generated
Rs. 315.92 Lakhs

Total
Publications
633

Seminar
Organized
34



Newsletter

Propagation



July 2017 to June 2018

Prof. Dr. P. Ravindran

&

**Head
SCANMAT Centre**

Area of Research

**Computational Condensed
Matter Physics**

Ph.D. Students

Completed – 6

On-Going – 8

Co-Supervisor – 1

Total Publications : 227

Citations : 593

H-Index : 50

Publications in Journals

1. M.R. Ashwin Kishore, P. Ravindran “Enhanced Photocatalytic Water Splitting in C₂N Monolayer by C-site Isoelectronic Substitution” *ChemPhysChem* 18 (12), 1526-1532 (2017) Impact factor: 3.075.
2. R Varunaa, P Ravindran “Phase Stability, Phase Mixing and Phase Separation in Fluorinated Alkaline Earth Hydrides” *J. Phys. Chem. C* 121 (40), 21806-21820 (2017) Impact factor: 4.536.
3. M.R. Ashwin Kishore, P. Ravindran “Tailoring the Electronic Band Gap and Band Edge Positions in C₂N Monolayer by P and As Substitution for Photocatalytic Water Splitting” *J. Phys. Chem. C* 121 (40), 22216-22224 (2017), Impact factor: 4.536.



Conference Proceedings

1. P.D. Sreedevi, P. Ravindran and R. Vidya, First principles prediction of the ground state crystal structures of anti-perovskite compounds A_3PN ($A = \text{Be, Mg, Ca, Sr, Ba}$ and Zn), International Conference on Materials for Energy and Environment (ICMEE-2018)
2. M.R. Ashwin Kishore and P. Ravindran, Effect of H Impurity on the Photocatalytic Activity of C_2N Monolayer, International Conference on Advances in Functional Materials (ICAFM-2017), Anna University, Chennai, India Volume: 1 ISBN: 978-93-80366-35-7 Pg:15-16
3. Lokanath Patra and P. Ravindran, First-principles prediction of coexistence of magnetism and ferroelectricity in BiFeWO_6 , International Conference on Advances in Functional Materials (ICAFM-2017) Anna University, Chennai, India Volume: 1, ISBN: 978-93-80366-35-7 Pg:191-192
4. R. Varunaa and P. Ravindran, Structural Phase Stability in Fluorinated Calcium Hydride, AIP Conference Proceedings 1832 (1), 030005.
5. Lokanath Patra and P. Ravindran, Prediction of Magnetoelectric behaviour in $\text{Bi}_2\text{MnTiO}_6$, AIP Conference Proceedings 1832 (1), 130053
6. M.R. Ashwin Kishore and P. Ravindran, Te Doped Indium (II) Selenide Photocatalyst for Water Splitting: A First Principles Study, AIP Conference Proceedings 1832 (1), 090029.

Editorial Board

1. Chairman of the Editorial board for World Journal of Condensed Matter Physics, Scientific Research Publishing (www.scirp.org) 5005 Paseo Segovia, Irvine, CA 92603-3334, USA
2. Editorial Advisory Board member for The Open Condensed Matter Physics Journal (ISSN: 1874-186X) www.bentham.org/open/tocmpj.

Programs Organised

1. Member, One day workshop on Atomic Force Microscopy, 2nd August 2018, Department of Physics, Central University of Tamil Nadu, India



Collaborations:

1. Prof. Helmer Fejllvag
Department of Chemistry
University of Oslo
P.O.Box 1033, Blindern
N-0315 Oslo, NORWAY

Email: helmerf@kjemi.uio.no

Ph : +47 22855560

Fax: +47 22855699

2. Anja O Sjøstad
Department of Chemistry
University of Oslo
P.O.Box 1033, Blindern
N-0315 Oslo, NORWAY

Email: a.o.sjastad@kjemi.uio.no

Ph: +47-22855848

Editorial Board

- Member – Executive Council of CUTN
- Member – Academic Council of CUTN
- Chairman, Research Advisory Committee, CUTN
- Chairman for the technical committee for purchase at CUTN
- Preparing question papers for CUCET entrance exam.
- Selection committee member for faculty recruitment & non-teaching staffs in CUTN
- Member - Building committee of CUTN
- Member – Department promotion committee (Teaching & Nonteaching), CUTN.
- Coordinator – Tree plantation in the Campus, CUTN
- Coordinator – Innovation and Incubation Cell, CUTN.
- Board of Study member for the Department of Materials Science, Madurai Kamaraj University.
- Expert committee for the Physics text book for +1 and +2 for SERT, Tamil Nadu.
- PhD examiner for at least five PhD students.



Prof. Dr. V. Madhurima

Area of Research

Computational Studies of
Molecular Interactions &
Soft Matter Physics

Ph.D. Students

Completed – 2

On-Going – 3

Total Publications : 50

Citations : 310

H-Index : 11

Newsletter

Propagation

July 2017 to June 2018



Publications in Journals

K Nilavarasi, Thejus R Kartha, V Madhurima, "Evidence of anomalous behavior of intermolecular interactions at low concentration of methanol in ethanol-methanol binary system", *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 188 (2017) 301–310.

Chapters in Edited Volumes

1. **Madhurima V** and K Nilavarasi, "Self-Assembly of Droplets on 1D and 2D Patterned Surfaces: A Review", a book chapter in the book titled "Nanotechnology-Driven Engineered Materials New Insights" published by Apple Academic press (2017).

Journal Referee:

- Bulletin of Materials Science
- Materials Focus
- Indian Journal of Pure and Applied Physics



Prof. Dr. L. Kavitha
Head of the Department

Area of Research
Nonlinear Dynamics
&
Nano Biomaterials
Project Funds Sanctioned

UGC-DAE: ₹. 4,07,880/-
CSIR: ₹. 24,41,800
DST-SERB: ₹. 6,60,000

Ph.D. Students

Completed – 16
On-Going – 4

Total Publications : 145
Citations : 2980
H-Index : 33

Newsletter

Propagation



July 2017 to June 2018

Award and Recognition

- ❖ Regular Associate of the Abdus Salam, International Centre for Theoretical physics (ICTP), Italy .
- ❖ Best Paper award- International Conference on Recent Trends in Analytical Chemistry (ICORTAC- 2018) on 15-17 March 2018, University of Madras.

Publications in Journals

1. V. Senthil Kumar, L. Kavitha, C. Boopathy and D. Gopi, “Loss-less propagation, elastic and inelastic interaction of electromagnetic soliton in an anisotropic ferromagnetic nanowire”, *Communication Nonlinear Science and Numerical Simulation*, 51, 2017, 50-65, Impact Factor: 2.834.
2. V. Senthil Kumar, L. Kavitha and D. Gopi, “Propagation of electromagnetic soliton in a spin polarized current driven weak ferromagnetic nanowire”, *Journal of Magnetism and Magnetic Materials*, 441, 2017, 660-671, Impact Factor: 2.357.
3. L. Kavitha, E. Parasuraman, A. Muniyappan, D. Gopi, S. Zdravkovic, “Localized discrete breather modes in neuronal microtubules”, *Journal of nonlinear dynamics*, 88, 2017, 2013–2033, Impact factor: 3.000.
4. L. Kavitha, M. V. Sataric, D. Gopi and A. Muniyappan, “Perturbed solitary excitations and soliton collisions along microtubule protofilament for assembly/disassembly processes”, *Journal of Biological Physics*, (Accepted for Publication (2017)), Impact Factor: 1.394.
5. E. Shinyjoy, L. Kavitha, K. Venkata saravanan, S. Kannan and D. Gopi, “Carbon nanofibre/polycarolactone/mineralized hydroxyapatite nanofibrous scaffolds for 2 potential orthopedic applications”, *ACS Applied Materials and Interfaces*, 9, 2017, 6342-6355, Impact Factor: 7.145.
6. L. Kavitha, R. Priya and D. Gopi, “Effect of temperature on the discrete solitons in Microtubules”, *Mathematical Sciences International Research Journal*, 6 (2), 2017, 99-103, Impact Factor: 2.03.



7. N. Ayyappan and L. Kavitha, “Solitary wave excitation in DNA under the influence of morse potential and the effect of stretching”, Mathematical Sciences International Research Journal, 6 (2), 2017, 99-103, Impact Factor: 2.03.
8. C. Boopathy, L. Kavitha and D. Gopi, “Decay of Localized Pulse Waves through Viscoelastic Tube of an Arterial System”, International Journal of Electronics, Electrical and Computational System (IJEECS), 6(8), 2017, 471-476, Impact Factor: 2.52.

Active Reviewer for the following journals

- ❖ Physica Scripta
- ❖ Journal of Cell Biochemistry and Biophysics
- ❖ Physica B
- ❖ British Journal of Mathematics and Computer Science
- ❖ Mathematical Problems in Engineering
- ❖ Mathematical Biosciences
- ❖ Ain Shams Engineering Journal
- ❖ Journal of the Association of Arab Universities for Basic and Applied Sciences
- ❖ European Physical Journal: D
- ❖ Wave Motion
- ❖ Journal of Magnetism and Magnetic Materials
- ❖ European Physical Letters
- ❖ Zeitschrift fur Naturforschung
- ❖ Materials Science and Engineering B
- ❖ Arabian Journal of Chemistry
- ❖ Applied Surface Science
- ❖ Annals of Physics
- ❖ Chaos Solitons & Fractals
- ❖ Computers & Mathematics with Applications



Conference Proceedings

1. D. Bhagya Mathi, D. Gopi, L. Kavitha, “Electrochemical evaluation of Hydroxyapatite/Halloysite nanotube/Polyvinyl pyrrolidone composite coating on Ti-6Al-4AV alloy for orthopedic applications”, International Conference on Electrochemical Science and Technology (ICONEST) – 2017, IISc-Campus, Bengaluru, 10-12 August 2017.

Collaborations

1. The Abacus salam international centre for Theoretical Physics (ICTP), Italy
2. The Max-Planck Institute for the Physics of Complex Systems, Germany.



Dr. M. Ponnurugan
Assistant Professor

Area of Research

**Statistical Mechanics &
Computational Physics**

Ph.D. Students
On-Going – 4

Total Publications : 31
Citations : 225
H-Index : 06

Newsletter

Propagation



July 2017 to June 2018

Publications in Journal

1. Relations between the efficiency, power and dissipation for the linear irreversible heat engines at maximum trade off figure of merit”I. Iyyappan and M. Ponnurugan, *J. Stat. Mech.: Theory and Exp*, P033202 (2018).
2. “General relations between the power, efficiency and dissipation for the irreversible heat engines in the nonlinear response regime” I.Iyyappan and M. Ponnurugan, *Phys. Rev. E* 97, 012141 (2018).
3. “[Van der Waal's gas equation for an adiabatic process and its Carnot engine efficiency](#),” Aravind P Babu, Kiran S. Kumar and M. Ponnurugan, *IAPT : Physics Education (India)*, 33(3) 4 (2017).
4. “Thermoelectric energy converters under trade of figure of merit with broken time reversal symmetry”, I.Iyyappan and M. Ponnurugan, *J. Stat. Mech.: Theory and Exp*, P093207 (2017).
5. “[Derivation of Van der Waal's equation of state in microcanonical ensemble formulation](#)” Kiran S. Kumar , Aravind P Babu and M. Ponnurugan, *IAPT : Physics Education (India)*, 33(3) 3 (2017)
6. “[Van der Waal's gas equation for an adiabatic process and its Carnot engine efficiency](#),” Aravind P Babu, Kiran S. Kumar and M. Ponnurugan, *IAPT : Physics Education (India)*, 33(3) 4 (2017).

Publications in Conference Proceeding

1. “Changes in morphology of human blood erythrocytes with various concentration of EDTA mixture”, V. Yesuraja and M. Ponnurugan, *International Conference on Electron microscopy and Allied Technology and XXXVIII Annual Meeting of the Electron Microscope Society of India (EMSI 2017)*, Mahabalipuram, Tamilnadu, India, July 17-19, 2017.
2. “Efficiency at maximum power of minimally nonlinear irreversible thermoelectric heat engines”, I. Iyyappan and M. Ponnurugan, *International Conference on Advances in Functional Materials (ICAFM2017)* at Anna University, Chennai, India, January 6-8, 2017.



Membership in Comittee

- Editorial Board Member - SCIREA journal of Physical Science
- Peer Reviewing in Physical Review E, Computational biology and Chemistry

Collaborations

- Yonsei Universty, Seoul, Korea
- University of Minho, Braga, Portugal
- University of Porto, Portugal
- Elettra synchrotron Radiation Facility, Italy



Dr. R. Arun
Assistant Professor

Area of Research

Quantum Interferences,
Cavity QED &
Quantum Computation

Ph.D. Students

On-Going – 2

Total Publications : 15

Citations : 211

H-Index : 07

Newsletter

Propagation

July 2017 to June 2018



Publications in Journal

1. Anjali N. Nair and R. Arun, Comment on “Protecting bipartite entanglement by quantum interferences” Physical Review A 97, 036301 (2018). Impact factor: 2.925

Program Organised

- ❖ Member, One day workshop on Atomic Force Microscopy, 2nd August 2018, Department of Physics, Central University of Tamil Nadu, India



Dr. K. Venkata Saravanan
Assistant Professor

Area of Research

Experimental Condensed
Matter Physics

Ph.D. Students
On-Going – 4

Total Publications : 48
Citations : 389
H-Index : 12

Newsletter

Propagation

July 2017 to June 2018



Publications in Journal

1. G.Ramalingam, K. Venkata Saravanan, T. Kayal Vizhi, M. Rajkumar and Kathirvelu Baskar, "Synthesis of water-soluble and bio-tagable CdSe@ZnS quantum dots", RSC Advances, Volume 8, Page 8516, 2018.
2. Irina Apostol, Jose Rodríguez, Inmaculada Cañadas, Jose Galindo, Senen Lanceros Mendez, Pedro Libânio de Abreu Martins, Luis Cunha and K. Venkata Saravanan, "Concentrated solar energy used for sintering magnesium titanates for electronic applications", Applied Surface Science, In Press, 2017. (Online 28 September 2017)

Publications in Conference Proceeding

1. Vinetha P, Shanmuga Priya B and Venkata Saravanan K, "Bipolar Ferroelectric Fatigue in $(K_{0.5}Na_{0.5})(Nb_{0.7}Ta_{0.3})O_3$ Ceramics and Improved Fatigue Endurance on Addition of ZnO", AIP Conference Proceedings, 1942, 110021-4, 2018.

Membership in Comittee

- Journal of Alloys and Coumpounds



Newsletter

Propagation



July 2017 to June 2018

Dr. K.C. Sekhar

UGC- Assistant Professor

Area of Research

**Semiconductors,
Thin films &
Nanostructures**

Project Funds Sanctioned

UGC : ₹. 6,00,000
DST-SERB: ₹. 46, 19, 600

Ph.D. Students

On-Going – 2

Total Publications : 63

Citations : 551

H-Index : 15

Award and Recognition

- ❖ Journal of Alloys and Compounds, Certificate of Outstanding Contribution in Reviewing Award October 2018.

Publications in Journals

1. K. Kamakshi, J. P. B. Silva, K. C. Sekhar, . A. Moreira, A. Almeida, M. Pereira, M. J. M. Gomes Substrate temperature effect on microstructure, optical and glucose sensing characteristics of pulsed laser deposited silver nanoparticles, Plasmonics 2017 (<https://link.springer.com/article/10.1007/s11468-017-0625-y>) (I.F: 2.139)
2. J. P. B. Silva, F. L. Faita, K. Kamakshi, K. C. Sekhar, J. A. Moreira, A. Almeida, M. Pereira, A. A. Pasa, and M. J. M. Gomes, “Enhanced resistive switching characteristics in Pt/BaTiO₃/ITO structures through insertion of HfO₂:Al₂O₃ (HAO) dielectric thin layer”, Scientific Reports (Nature), Vol. 7, pp. 46350 (2017) (I.F: 4.259)
3. A. K. Kunti, K.C. Sekhar, Mario Pereira, M. J. M. Gomes, S. K. Sharma, “Oxygen partial pressure induced effects on the microstructure and the luminescence properties of pulsed laser deposited TiO₂ thin films” AIP advances , Vol. 7 (1), 015021 (2017) (I.F: 1.568)
4. J.P.B. Silva, M.Vorokhta, F.Dvorak, K.C.Sekhar, V.Matolin, J.Agostinho Moreira, M.Pereira, M.J.M.Gomes, “Unraveling the resistive switching effect in ZnO/0.5Ba(Zr0.2Ti0.8)O₃-0.5(Ba0.7Ca0.3)TiO₃ heterostructures”, Applied Surface Science , Vol. 400, pp. 453-460(2017). (I.F: 3.387)
5. J.P.B.Silva, K.Kamakshi, K.C. Sekhar, X.R.Nóvoa, E.C.Queirós, J.Agostinho Moreira, A. Almeida, M. Pereira, P.B. Tavares, M.J.M. Gomes, Light controlled resistive switching and photovoltaic effects in ferroelectric 0.5 Ba (Zr0.2Ti0.8)O₃-0.5 (Ba0.7Ca0.3)TiO₃ thin films, Journal of the European Ceramic Society, Vol. 37,pp.583-591 (2017) (I.F: 3.411)



Publications in Conference Proceeding

1. A.Sahoo, AR Jayakrishnan, K. Kamakshi, JPB Silva, **K.C. Sekhar**, MJM Gomes, Optical and electrical properties of sol-gel spin coated titanium dioxide thin films IOP Conference Series: Materials Science and Engineering, Volume 225, Issue 1 Pages 01202 (2017)
2. AR Jayakrishnan, Athul Thomas, **K.C.Sekhar**“ Structural and ferroelectric properties of $0.6[\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3]-0.4[(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3]$ ceramics, Proceeding on National seminar on Recent Trends in Nano and Other Materials for Energy efficient Devices organized by St. Aloysius College, Alappuzha, Kerala, India, during 20th to 22nd July 2017 (ISBN no:978-81-922650-0-7)

Membership

- Plasmonics; Pharmaceutical Nanotechnology; International Conference on New Material and Chemical Industry;



Dr. M. Sterlin Leo Hudson

Area of Research

Nanostructured materials for energy storage applications

Ph.D. Students
On-Going – 2

Total Publications : 63
Citations : 551
H-Index : 15

Award and Recognition

- ❖ Fulbright Award (2017) by the U.S. Department of States, Washington D.C., USA.

Publications in Conference Proceeding

1. M. Sterlin Leo Hudson, “High pressure H₂, CH₄ and CO₂ uptake characteristics of graphene-like sheets derived from camphor assisted exfoliation of graphite oxide”, 2017 TechConnect World Innovation Conference & Expo and National Innovation Summit, Washington D.C., USA. 16-05-2017.
2. M. Sterlin Leo Hudson, “Critical calibration parameters for high-pressure volumetric gas adsorption measurement and CO₂, CH₄ & H₂ isotherm of three NIST Reference Zeolite Materials”, Indo-Norway Workshop on Advanced Materials, JNCASR, Bangalore 25-04-2017.

Publications in Journals

1. Ramesh, M. Jeyavelan and M. Sterlin Leo Hudson*, “Electro-chemical properties of reduced graphene oxide derived through camphor assisted combustion of graphite oxide”, Dalton Transactions 47 (2018) pp. 5406-5414.
2. Bhatnagar, B. K. Gupta, P. Tripathi, A. Veziroglu, M. Sterlin Leo Hudson, M.A. Shaaz and O.N. Srivastava, “Development and demonstration of air stable rGO-EC@AB5 type hydrogenated intermetallic hybrid for hydrogen fueled devices”, Advanced Sustainable Systems 1 (2017) 1700087.
3. M. Jeyavelan, A. Ramesh, R. Rathes Kannan, T. Sonia, K. Rugunandhiri and M. Sterlin Leo Hudson*, “Facile synthesis of uniformly dispersed ZnO nanoparticles on polystyrene/rGO matrix and its superior electrical conductivity and photocurrent generation”, RSC Advances 7 (2017) pp. 31272-31280. Impact Factor: 3.108
4. Zhao Qian, H. Raghubanshi, M. Sterlin Leo Hudson, O.N. Srivastava, Xiangfa Liu and Rajeev Ahuja, “Ab initio insight into graphene nanofibers to destabilize hydrazine borane for hydrogen release”, Chemical Physics Letters 669 (2017) pp.110-114. Impact Factor: 1.860

Newsletter

Propagation



July 2017 to June 2018

Collaboration

- National Institute of Standards and Technology (NIST), Washington D.C., USA.

Membership

- ACS Photonics
- ACS Sensor
- ChemPhysChem
- Fulbright Alumni Association, USA
- NIST Researcher Association, USA



Newsletter

Propagation



July 2017 to June 2018

Ph.D Scholars (JRF / SRF / Research Assistants)

Name : Aswini Harindran

Title : Coagulation studies of biological systems

Name : Ayyappan N

Title : Nonlinear Dynamics of twisted DNA

Name : Kiruthika S

Title : Hydrogen storage

Name : Sree Devi P.D

Title : Solar cell

Name : Yesu Raja

Title : Experimental and theoretical physics

Name : Roshan Jose

Title : Oxide thermoelectric materials for energy
harvesting

Name : Vineetha P

Title : Development of lead-free piezo-ceramics
for high performance electronic devices

Name : Anu Mariya Augustine

Title : Li-ion battery materials



Newsletter

Propagation



July 2017 to June 2018

JRF / SRF / Research Assistants

Name : Arul Anne Elden

Title : Non-Boltzmann techniques for complex systems

Name Bhagya mathi

Title : Orthopaedic applications

Name : Hebrew Benhur Crispin

Title : Vacuum induced coherence (VIC) effects in
fluorescence

Name : Charan Prasath S

Title : Thermoelectricity

Name : Beni

Title : Nonlinear dynamics

Name Rakhi V

Title : Computational organic semiconductors

Name : Mukesh Kumar Choudhary

Title : Designing thermo electric materials with high ZT
for efficient heat to electricity generation and
refrigeration

Name : Geo Sunny

Title : Nonlinear dynamics of ordered magnetic materials

Name : Kiran T

Title : Shortcut to Adiabaticity



**JRF / SRF /
Research Assistants**

Newsletter

Propagation

July 2017 to June 2018



Name :Christy Maria Joy
Title : Soliton propagation in DNA

Name : Vishnu Sudarsan
Title : "Ab initio modelling of energy storage materials
for Na-ion batteries"

Name : Jayakrishana A R
Title : Ferroelectric photovoltaic cells

Name : Varunaa
Title : Search for an efficient material for hydrogen storage
applications

Name : Anina Anju B
Title : Soft condensed Matter Physics

Name : Ammu vijay
Title : thermoelectric ceramics

Name : Kevin V Alex
Title : Thin films, 2-D transition metal dichalcogenides

Name : Anjali N Nair
Title : Quantum entanglement



Newsletter

Propagation



July 2017 to June 2018

Distinguished visitors

S.No	Name of the Speaker & Address	Title	Date
1	Dr M Ashok, Associate professor, Department of physics, NIT Trichy.	Need for nanostructure material.	14.07.2017
2	Dr. Sesa S. Srinivasan, Florida Polytechnic University, Lakeland, Florida, USA.	Exotic Materials' Discovery for Sustainable Infrastructure	17.07.2017
3	Dr. A.Chandra Bose, department of physics, NIT Trichy.	Nano material synthesis classification and application	26.07.2017
4	Prof. Deshdeep Sahdev, Quazartech/ (EX), IIT, Kanpur	Concrete ways of improving the teaching of experimental Physics and The electron fluid in solid state devices	23.10.2017
5	Dr.S.V.M. Sathyanarayana, Assistant Professor, Department of Physics, Pondicherry University, Pondicherry.	Learning and Teaching Quantum Mechanics: Challenges involved.	27.10.2017
6	Dr.Swepna Nair, Associate Professor, Department of Physics, Central University of Kerala	Multiferroics and magneto electrics	18.12.2017
7	Dr.T.Prabhakaran, Department of Materials engineering, University of concepcion, concepcion, Chile.	Functional properties of ferrites and ferrite nanocomposites	23.02.2018



Newsletter

Propagation

July 2017 to June 2018



Seminars / Talks

S.No	Date	Name of the Resource Person	Title of Seminar
1	07.07.2017	Mr.Ashwin Kishore, Research Scholar, Department of Physics, CUTN	Ab initio modelling of graphitic carbon nitride based Nano structures for enhanced photocatalytic water splitting activity
2	14.07.2017	Dr M Ashok, Associate professor, Department of physics, NIT Trichy.	Need for nanostructure material.
3	17.07.2017	Dr. Sesa S. Srinivasan, Florida Polytechnic University, Lakeland, Florida, USA.	Exotic Materials' Discovery for Sustainable Infrastructure
4	26.07.2017	Dr. A.Chandra Bose, department of physics, NIT Trichy.	Nano material synthesis classification and application
5	04.08.2017	Mr.Lokanath Patra, Research Scholar, Department of Physics, CUTN	Met magnetism induced strong magneto electric coupling
6	11.08.2017	Ms.K.Nilavarasi, Research Scholar, Department of Physics	Evidence for roughness driven depinning of self-assembled liquid droplets
7	18.08.2017	Mr.I.Iyyappan, Research Scholar, Department of Physics, CUTN	Performance of a Thermoelectric Energy converter under Various Optimization Criterion
8	01.09.2017	Mr. A. Ramesh, Research Scholar, Department of Physics.CUTN	A Novel approach for Synthesizing Graphene Oxide by Camphor assisted combustion and its application in electrochemical energy storage
9	08.09.2017	Dr.M.Sterin Leo Hudson, DST INSPIRE Faculty, Department of Physics, CUTN	Hydrogen: The Ultimate Fuel of the Future
10	15.09.2017	Prof.T.Sengadir, Department of Mathematics, CUTN.	An introduction to the ideas of curve, surface, n-dimensional manifold.
11	06.10.2017	Prof. P. Ravindran, Professor and Head, Department of Materials Science	Recent Advances in solar thermal technologies for energy harvesting.
12	13.10.2017	Dr.Gayathree Mohan, Assistant Professor, Department of Physics, CUTN	Study of solutions in Bose-einstein condensates.
13.	23.10.2017	Prof. Deshdeep Sahdev, Quazartech/ (EX), IIT, Kanpur	Concrete ways of improving the teaching of experimental Physics and The electron fluid in solid state devices
14	27.10.2017	Dr.S.V.M. Sathyanarayana, Assistant Professor, Department of Physics, Pondicherry University, Pondicherry.	Learning and Teaching Quantum Mechanics: Challenges involved.
15	10.11.2017	Dr.K.Saranya, Assistant Professor (on contract), Department of Physics, CUTN	Development of graphene and carbon nanofibers based materials for dye sensitized solar cell
16	8.12.2017	Dr.M.Dhavamurthy, Assistant Professor (on contract), Department of Physics, CUTN	Spectroscopic studies on organic single crystal and its applications
17	15.12.2017	Dr.Michale SL Shanthi, Assistant Professor (on contract), Department of Physics, CUTN	Introduction to Biomaterials
18	18.12.2017	Dr.Swepna Nair, Associate Professor, Department of Physics, Central University of Kerala	Multiferroics and magneto electrics
19	19.01.2018	Dr.O.Prakash, Assistant Professor (on contract), Department of Physics, CUTN	Solar eruptions and their effects on the Earth space weather conditions
20	02.02.2018	Dr.A Karthik, Assistant Professor (on contract), Department of Physics, CUTN	Al ₂ O ₃ -ZrO ₂ Metal Oxide Nano Composites for Surface Protective Coating Applications
21	09.02.2018	Ms.Aswini Harindran, Research Scholar, Department of Physics, CUTN	An experimental approach to study the coagulation of milk
22	09.02.2018	Nidhin S.R., Integrated M.Sc. Physics - 2014-19 Batch	Quantum Indeterminacy and Preparation Uncertainty Relations
23	16.02.2018	S Kiruthika, Research Scholar, Department of Physics, CUTN	Amphoteric behavior of Hydrogen in Complex Hydrides
24	16.02.2018	Ms. Lekshmi T, IV th year Integrated MSc in Physics, Department of Physics,CUTN	Probing the dark matter halo of the milky way using the kinematic data of its satellites
25	23.02.2018	Dr.T.Prabhakaran, Department of Materials engineering, University of conception, conception, Chile.	Functional properties of ferrites and ferrite nanocomposites
26	23.03.2018	Ms. Ruchi Mishara, UIV Year, Department of Physics, CUTN	Introduction to blackholes
27	23.03.2018	Abhyoudai SS, III Year (I.Msc Physics), Department of Physics, CUTN	Large hadron collider (LHC)- A stepping stone towards new era of science.



Newsletter

Propagation

July 2017 to June 2018



Students Achievements

S.No	Name of the Students	Achievements
1.	Mr.Geo Sunny	Awarded with DST Inspire Fellowship
2.	Ms. Nilavarasi	TNSET CSIR JRF examination Qualified
3.	Ms. Anina Anju	CSIR JRF examination Qualified
4.	Mr. Kevin V Alex	Awarded with DST Inspire Fellowship
5.	Arjun R Krishnan & Aaryaprabhakaran (IV Year I.MSc)	First prize for the event ANVESHANA (conducted a Physics fest named APEIRON-18 at Bharathidasan University, Trichy)
6.	Nidhin S R & Sangami G.S (IV Year I.MSc)	Second price in the National level quiz competition (InPhyNITT 2018) conducted by the department of Physics, NIT Trichy
7.	Aswani.	Awarded with DST Inspire Scholarship
8.	Lekshmi. T	Awarded with DST Inspire Scholarship
9	Arjun R Krishnan	Awarded with DST Inspire Scholarship
10	Gopika G Pillai	Awarded with DST Inspire Scholarship
11	Ruchi Mishra	NRTS Scholarship, Vivekananda Shiksha Kendra



Newsletter

Propagation



July 2017 to June 2018

Project Details

S.N	Project Title and Fund Received	Period	Amount Sanctioned	Funding Agency
Prof.P.Ravindran				
1	Developing materials for high efficiency silicon-hybrid perovskite tandem solar cells	2017 to 2020	20 lakhs	CSIR-EMR
2	Nanoscale Modelling of Energy-storage materials	2014 to 2017	30.4 lakhs	DST – Nanomission Program
3	Understanding Oxide Materials for renewable energy Under Indo-Norwegian Cooperation Program (INCP)	2015 to 2018	56.5 lakhs	UGC – India & Senter for Internasjonaliser-ing av Utdanning (SIU) Norway
Prof.V.Madhurima				
4.	Co-Investigator in Synthesis and Characterization of n-type Organic Semiconductor for Potential Application in Electronics	2015-2018	9.3 Lakhs	MRP-MAJOR -CHEM-2013-2056-CHEMISTRY
Prof.L.Kavitha				
5.	Investigation on the propagation of Electromagnetic wave (EMW) and EMW induced ultrafast magnetization switching soliton dynamics in ferromagnetic nanowires (Ref.No.03(1418)/17/EMR-II)	3 Years 2017-2020	15.61 Lakhs	CSIR-Major Research Project
6.	Mathematical Modelling and Exact Propagating soliton solutions of few nonlinear partial differential equations governing the nonlinear magnetization dynamics of ordered magnetic systems	3 Years 2017-2020	6.60 Lakhs	DST SERB- Matrices- Major Research Project
Dr.K.Venkata Saravanan				
7.	Principle Investigator Nano Crystalline Calcium Manganite based Thermoelectric Oxides for efficient waste heat recovery	2016-2019	39.11 Lakhs	DST- SERB- ECR Grant
Dr.K.C.Sekhar				
8	Development of functional materials	2017-2019	6 lakhs	UGC
9	Novel memristors based on Lead free ferroelectric Semiconductor herterostructures	2018-2021	46.20 lakhs	DST-SERB
Dr.M.Sterlin Leo Hudson				
10	Investigations on Strategic Materials for Sustainable Energy Storage	2013 to 2018	86.2 Lakhs	Department of Science and Technology, New Delhi

Advanced Experimental Techniques (AET-2018) 15-16, March 2018



EVENTS (AET-2018)

*:Demonstration will be conducted in two parallel sessions.

Theory and demonstration sessions will be handled by the faculty members and resource persons. The details of the programme and registration form for participant are available in the website:<https://cutn.ac.in>. For online registration: <https://goo.gl/forms/fuCt4a6DWpQxvVI22>

**Registration fee# : Rs.300 (for Post graduate students and Research scholars)
Rs.500 (for faculty members)**

#Registration fee includes workshop kit, refreshments and lunch

For Online Payment

Account Name : **CUTN-PROJECT ACCOUNT**

Bank : **State Bank of India**

Account No : **35969069371** IFSC : **SBIN0018724**

Accommodation : Accommodation can be arranged on request (first come first serve basis).

Number of participants is restricted to 50 only. Participation is confirmed only after receiving the online payment and filled in registration form. The participants are requested to fill the online transaction Id in the registration form without fail.

Dead line for Registration : 9th March, 2018

Please write "AET-2018" on the envelop or the subject line of your email and send your registration form along with online payment details to or email the copy of filled registration form to aet2k18@gmail.com

Chief Patron	: Prof. A. P. Dash, Honourable Vice-Chancellor
Patron	: Dr. S. Bhuvaneshwari, Registrar
Co-Patron	: Dr. A. Ragupathy, Controller of Examinations
Convenor	: Dr. L. Kavitha, Head
Co-convenor	: Dr. V. Madhurima
Organising Secretaries	: Dr. K. Venkata Saravanan Dr. K. C. Sekhar, Dr. M. Sterlin Leo Hudson
Treasurers	: Dr. M. Ponmurugan & Dr. R. Arun
Technical Co-ordinator	: Mr. A. Sulthan Ibrahim
Local Organisers	: Dr. Gayathree Mohan, Dr. K. Saranya Dr. O. Prakash, Dr. R. Murugan Dr. M. Dhavamurthy, Dr. A. Karthik Dr. S. Krishnaraj, Dr. Michael Shanthi Mr. R. Dhanaraj, Mr. M. Lakshmana Prabu Mr. Thirumeninathan

For registration and other details contact

Email : aet2k18@gmail.com Contact : 04366-277228

Mr. A. Sulthan Ibrahim : 9488568068, Dr. K. C. Sekhar : 94892 06963

How to reach CUTN

The closest town to CUTN is Thiruvarur, Tamil Nadu. Reach Thiruvarur either by bus or train. Thiruvarur bus stand is just 100m away from the railway station. From bus stand, one may board a bus heading towards Mayiladuthurai and alight at Kanganalancherry bus stop which is 4 kms from CUTN and will take approximately 15 minutes by walk. From Kanganalancherry, one may prefer auto to CUTN campus which is just 4 kms away.



CENTRAL UNIVERSITY OF TAMIL NADU

Thiruvarur - 610 005
Tamil Nadu, India



15 - 16, March 2018

*Workshop
on*

ADVANCED EXPERIMENTAL TECHNIQUES (AET-2018)

Organized by

DEPARTMENT OF PHYSICS
School of Basic and Applied sciences
Central University of Tamil Nadu
Thiruvarur 610 005
Tamil Nadu, India



EVENTS (AET-2018)



EVENTS (AET-2018)



EVENTS (AET-2018)

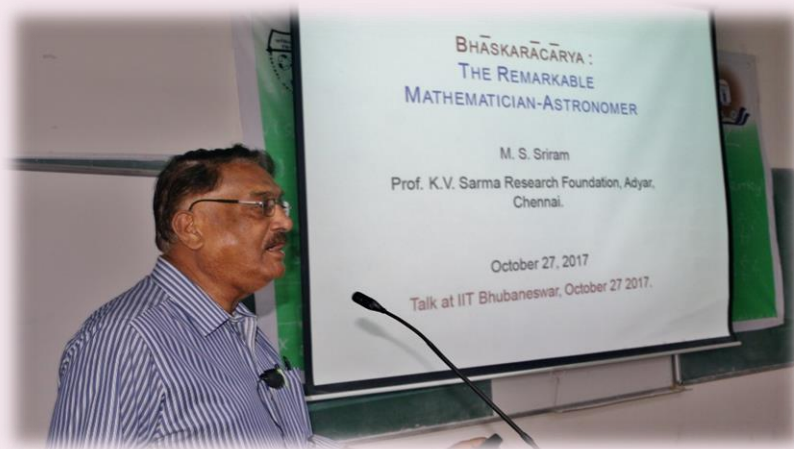
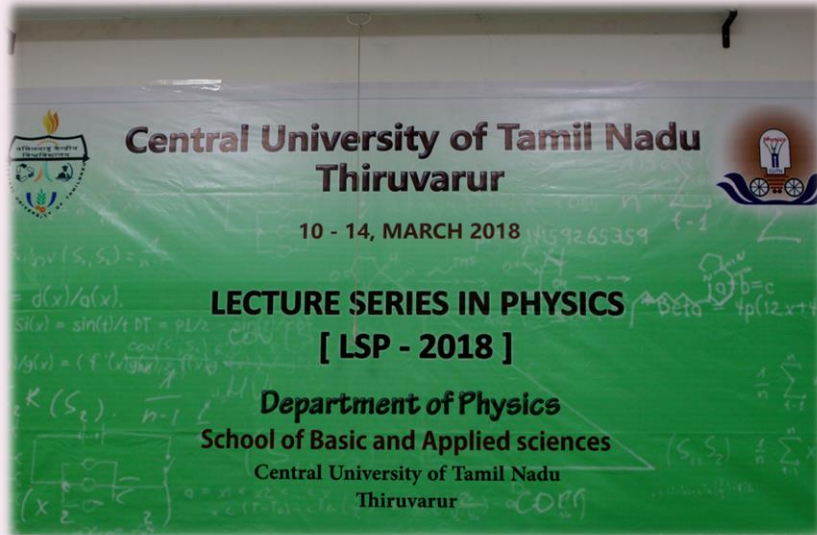


EVENTS (AET-2018)



EVENTS (AET-2018)

Lecture Series in Physics (LSP-2018) 10-14, March 2018



EVENTS (LSP-2018)



CENTRAL UNIVERSITY OF TAMIL NADU

LECTURE SERIES IN PHYSICS II (LSP-2018)



Organized by
DEPARTMENT OF PHYSICS
School of Basic and Applied Sciences
CENTRAL UNIVERSITY OF TAMIL NADU
Thiruvaur - 610 005, Tamil Nadu

10 - 14 March 2018

Chief Patron

Prof. A.P.Dash
Honourable Vice Chancellor

Patron

Dr. S. Bhuvanewari
Registrar

Co-Patron

Dr.A. Raghupathy
Controller of Examinations

Convenors

Dr.L.Kavitha, Head
Dr.V.Madurima

Organising Secretaries

Dr. M. Ponnuragan
Dr. R. Arun

Treasurers

Dr.K.Venkatasaravanan
Dr.K.C.Sekhar

Local Organisers

Dr.Shrelin Leo Hudson
Dr.Gayathree Mohan
Dr.K.Saranya
Dr.O.Prakash
Dr.R.Murugan
Dr.M.Dhavamurthy
Dr.A.Karthik
Dr.S.Krishnaraj
Dr.MichaleShanthi
Mr.A.Sulthan Ibrahim
Mr. Lakshmana Prabu
Mr. Tirumeninthan
Mr. Dhanraj

Registration fee for outstation participants

Rs 200 (for post graduate students and research scholars)

Rs.500 (for faculty members)

Registration fee includes workshop kit, refreshment and lunch.

For online payment :-

Account Name : CUTN-PROJECT-ACCOUNT
Bank : State Bank of India
Account No : 3596069371
IFSC : SBIN0018724
Demand line for registration : 05 March 2018

Please write 'LSP-2018' on the envelope of the subject line of your email and send your registration form to The Head, Department of Physics, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvaur - 610 005, Tamil Nadu or email the copy of filled registration form to : lp2018@gmail.com

The participants are requested to fill the online transaction id in the registration form web portal.

CUTN at a Glance

The Central University of Tamil Nadu (CUTN) is located in Thiruvaur, an gion of cultural and historical significance. The CUTN, along with eight other Central Universities was established through an Act of Parliament in 2009. The CUTN with two campuses set in a serene atmosphere in the Neelakudi and Nagakudi villages in the banks of Vettar River. This milieu at CUTN offers a creative and multicultural learning environment for the students with dynamic academic, curricular and extracurricular activities. The CUTN comprises ten Schools with 22 Departments and houses more than 1600 students from all over India. The CUTN offers Integrated M.Sc., postgraduate and doctoral programmes. Please visit for further details <http://cutn.ac.in/>

Department of Physics @ CUTN

The Department of Physics at CUTN provides a world class and unique atmosphere for its students to learn, achieve and grow. Since its inception in the year 2010, the Department of Physics is geared towards excellence with a devoted staff, modern worldclass teaching laboratories and experienced faculty members. The faculty members of Department of Physics currently hold various research projects from various funding agencies of government of India such as UGC, DST-SERB, DST-MATRIGS and CSIR with a total amount close to Rs 2crores. The Department of Physics offers a five year integrated M.Sc. programme (30 admissions each year) in addition to the regular Ph.D. program. The Department currently houses 149 I M.Sc. students and 29 research scholars and our interest in research spread over many interdisciplinary areas of Science such as Material Science, Biophysics, Nanofierotics, Statistical Physics, Condensed and Soft Matter Physics, and Computational Physics.

Scope of the Lecture Series

Quantum Physics, Statistical Physics and Astrophysics are the most fundamental parts of theoretical Physics. These subjects not only provide the basic tools for analyzing the behaviour of complex systems but also hints at and is fully compatible with dynamical aspects of theory underlying the laws of nature. The aim of this crash lecture series has two main goals (i) To introduce/revive the fundamental aspects of the Quantum mechanics, Statistical Physics and Astrophysics at a level necessary for a good understanding. (ii) To educate the audience with the applications and latest developments of the above subjects in detail.

This lecture series will provide a clear idea about the key concepts of Quantum Physics, Statistical Physics and Astrophysics and also outline the

modern perspectives. The main focus of the present lecture series is to motivate the students to do basic and applied research in the areas of Astrophysics, Quantum mechanics and Statistical Physics. This lecture series will also cover the latest updates and discuss the possible future directions of research in these fields of theoretical Physics.

Target audience

Post graduation students, Research Scholars and Young Faculty members in Physics.

Tentative programme Schedule

Theory and Tutorial sessions will be handled by the following resource persons.

Day	Sessions	Time	Topics	Speakers
10-3-2018	Forenoon	9.30 AM - 10.40 AM	Registration	
		10.40 AM - 11.20 AM	Atomic Physics	Prof. M.S. Srirani, Professor of Physics, Pondicherry University, Puducherry
11-3-2018	Forenoon	10.40 AM - 11.20 AM	Quantum Mechanics	Prof. S. Lakshmi Devi, Professor of Physics, Indian Institute of Technology Madras (IT Madras), Chennai
	Afternoon	11.30 AM - 12.30 PM	Statistical Physics	Prof. K. P. N. Murthy, Adjunct Professor, Chennai Mathematical Institute, Chennai
12-3-2018	Forenoon	10.40 AM - 11.20 AM	Quantum Mechanics	Prof. S. Lakshmi Devi, Professor of Physics, Indian Institute of Technology Madras (IT Madras), Chennai
	Afternoon	2.40 PM - 3.20 PM	Statistical Physics	Prof. K. P. N. Murthy, Adjunct Professor, Chennai Mathematical Institute, Chennai
13-3-2018	Forenoon	10.40 AM - 11.20 AM	Quantum Mechanics	Prof. S. Lakshmi Devi, Professor of Physics, Indian Institute of Technology Madras (IT Madras), Chennai
	Afternoon	2.40 PM - 3.20 PM	Statistical Physics	Prof. K. P. N. Murthy, Adjunct Professor, Chennai Mathematical Institute, Chennai
14-3-2018	Forenoon	10.40 AM - 11.20 AM	Quantum Mechanics	Prof. S. Lakshmi Devi, Professor of Physics, Indian Institute of Technology Madras (IT Madras), Chennai
	Afternoon	2.40 PM - 3.20 PM	Statistical Physics	Prof. K. P. N. Murthy, Adjunct Professor, Chennai Mathematical Institute, Chennai
	Evening	4.30 PM - 5.15 PM	Validation Function	

Registration

The details of the programme and registration form for the participants are available in the website: <http://cutn.ac.in>. For

Online Registration :-

<https://goo.gl/forms/H8w6ARs8MTGOLDG2>

Size of the Program

Number of Outstation participants is restricted to 30. Participation is confirmed only after receiving the filled registration form along with online payment details.

Accommodation: Accommodation can be arranged on request (first come first serve basis).

How to reach CUTN

The closest town is Thiruvaur, Tamil Nadu. Reach Thiruvaur either by bus or train. Thiruvaur bus stand is just 100m away from the railway station. From bus stand, one may board a bus heading towards Mayiladuthurai and alight at Kanganalanchery bus stop which is 4km from CUTN and will take approximately 15 minutes by walk. From Kanganalanchery, one may prefer auto to CUTN campus which is just 4 kms away.

CONTACT

Office : 04366-27228

Mr. A. Sulthan Ibrahim
94885 68068

Dr. M. Ponnuragan
85263 90005

Dr. R. Arun
94890 542285

Department of Physics' colloquium and seminar series has been a huge success right from its initial days. It has seen a significant rise in interest from the students and research scholars as a series of lectures are delivered by faculty members, research scholars and subject experts from various prestigious institutions from across the country. It has always been a source of inspiration and motivation for the students



EVENTS (LSP-2018)



EVENTS (LSP-2018)



EVENTS (LSP-2018)

National Science Day Celebrations Exhibition of Natural Science (EON-2018) 28, February 2018

PHYSICS

இயற்பியல் 2018



EVENTS (EON-2018)



CENTRAL UNIVERSITY OF TAMIL NADU



National Science Day Celebrations EON 2018

(Exhibition of Natural Sciences)

DEPARTMENT OF PHYSICS

School of Basic and Applied sciences
CUTN, Thiruvavur

28th
February
National SCIENCE Day



Target Audience : All Science enthusiasts.
Venue : Department of Physics
Central University of Tamil Nadu
Schedule : 9 am to 3.30 pm
Prize : First (Certificate with memento)
Second (Certificate)
Third (Certificate)
email ID : cutneon@gmail.com

Objectives of Celebrating National Science Day

- National Science Day is being celebrated every year to widely spread a message about the significance of scientific applications in the daily life of the people.
- To display all the activities, efforts and achievements in the field of science for human welfare.
- To discuss all the issues and implement new technologies for the development of the science.
- To give an opportunity to the scientific minded citizens in the country.
- To encourage the people as well as popularize the Science and Technology.

The theme of the year 2018 is "Science and Technology for a sustainable future"

Events and Program Highlights
Sustainable transport: A view of the future

Following the theme of the science day 2018 we aim to showcase and demonstrate how powering our daily commute through sustainable sources will help us fight against global warming and climate change. Join us and learn how you too can save a baby seal or a cute penguin.

Gravitational wave model @ Space Room

Gravitational waves have made waves in the news these past two years, through a sublime demonstration understand and appreciate how important this discovery means to us and how it has opened up a whole new way to look at the stars and wonder.

VR experience.
The days of looking at your phones are over, this is the time to dive into them to see a whole new augmented world, a journey through the cosmos and a visual tour to celebrate the history of human ingenuity and passion.

Arcade nostalgia - physics engine

You may be a PC, PS, Xbox, Nintendo or even a mobile person but we all appreciate and enjoy our game time. Travel with us on a journey starting from Roadrash and contra to CS source, learn how game physics work through playing.

3-D chess competition

Chess is great but could it be greater, yes it can! Want to know how? Come and immerse yourself in a star trek themed 3D chess competition to defeat your opponent not in one but in five different planes.

Newtonian and Non-Newtonian fluids : Dreamt of walking on water? Say no more make your dream a reality. Disclaimer: Hope you know how to swim ;)

Interactive demonstrations

Demonstrations are boring, but what if you could be a part of them. Learn the wonders of physics in our daily lives doing daily things but this time by knowing how physics encapsulates us all.

Waveguides

Ever wondered how the internet works? Have you seen water flowing in a pipe? Want to see information flowing? Don't worry we will show you and more, much more!

Optics related demos

Light makes this world beautiful, light gives us hope, light makes us feel safe. Let's pay our tribute to light by knowing more about it and to debate if it's a particle or a wave.

Hydraulics

Do you like mighty Thor or the green monster Hulk, want to feel their power? It can be arranged, hydraulics for all!! Lift with slightest of touch, sorry but Gym doesn't work this way.

Treasure hunt

Treasure is an enigma, and we chase them every day, but what if you could find our treasure? It won't be easy but if you are up for it see you there.

Colour the Canvas

We hope you are one of those people who enjoy sitting quiet and draw some lines? If you are don't fuss we have something for you too. Paint your heart's content but only after you learn how colors come to be.

Food Race

Sweet or sour, Hot or Tang, life gives us all. Come take part and taste your answers to our questions! Sounds like a riddle? Yes it is! Figure it out or come find out.

Meme Competition

You may be a millennial or a 90's kid but surely we all enjoy our daily dose of memes. How about trying your hand at it? Sounds sweet? We know we are!

The Great Debate

Brains over Brawns, To hell or high water, lets battle for glory. Not by jousting but with your wits and words.

Registration Details

- No registration fee
- Spot registration begins at 8.30 am on 28th February, 2018.
- All the participants must bring their Institution ID card

Note : Meme Competition

- Send your memes to cutneon@gmail.com on or before 27/02/2018
- Each participant can send maximum of three memes.
- Published memes are not considered for selection.
- Participants can make memes in any languages but preferably in English.

Contact

Dr. K. Venkata Saravanan
Event Coordinator
94890 54289

Dr. K. C. Sekhar
Coordinator Perturbations Club
94892 06963

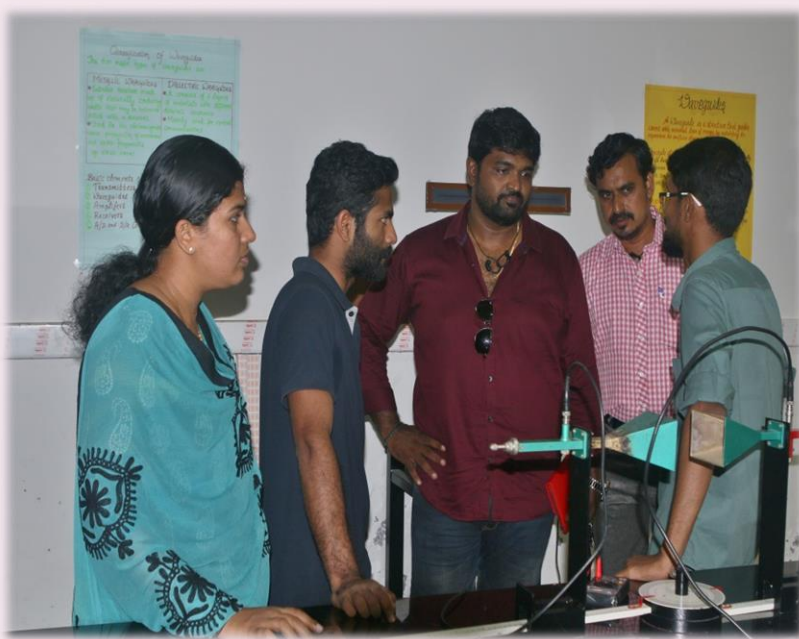
EVENTS (EON-2018)



EVENTS (EON-2018)



EVENTS (EON-2018)



EVENTS (EON-2018)

Physics Club of the Department of Physics has always played an active role to feed into the enthusiasm of the students. During 2017-18, the club saw new enrolment from the first year students apart from the regular discussions and meetings. It organized a Physics Quiz contest but saw students participating from several departments of the university ranging from science to business management. In all, over 60 students participated in the quiz contest





GALLERY



GALLERY



GALLERY