



REFLECTIONS

A Department of Physics
Annual Newsletter
2019–2020

ICFAI Science School
ICFAI University Tripura




From the Pro-Vice Chancellor's Desk

I am amazingly delighted to inform that the Department of Physics, a constituent faculty of ICFAI Science School, ICFAI University Tripura has been successful in presenting its first Newsletter 'Reflections' in such an exemplary way. I firmly believe that the Newsletter will serve as an encouragement for the on-going and upcoming batches of the students with the aid of its proper manifestation of the current academic, extracurricular and other achievements of the department. I am congratulating the each and every member of this department for their achievement.

The ICFAI University Tripura is a premier academic institution of the State of Tripura providing quality education and research facilities for the young north eastern talents. Our university attracts talented students and researcher from all over India and abroad too.

I am pleased to share that our University is steadily advancing towards the aim to become an Institute of Excellence in the North-Eastern region and have already become the most trusted educational institution for the young students and researchers choices from all over India and as well as abroad.

The Department of Physics was established in 2018 and is now offering B. Sc.(Hons.), M. Sc. Degrees and Ph. D program. With unfurling of the First volume of Newsletter from the Department of Physics, I am delighted to observe that the ICFAI University Tripura has been victorious in claiming the trust of the State and the Nation in emerging as one of the best academic as well as research institution and for this I am congratulating to each and every member of this big family for their respective roles in this ardent venture.


Prof. Biplab Halder
Pro-Vice Chancellor



From the Desk of the Registrar

With great pleasure, I want to convey my hearty congratulations to the Department of Physics, The ICFAI University Tripura for their endeavours in coming up with the Physics Newsletter 'Reflections'. Although still very young, Department of Physics is one of the very fine Departments of the ICFAI University Tripura that has been not only focused in imparting quality education and outstanding research but has always aimed towards the holistic development of its students of the State and Nation at large. We, at the ICFAI University Tripura have been fully devoted in our pursuit of providing education and academic expertise even during the demanding times of COVID-19 Crises. Department of Physics along with all the other academic Departments of the ICFAI University Tripura has been actively involved in this quest by organizing different academic programs along with their online regular classes and academic duties. Department of Physics deserves lot of accolades for all their numerous initiatives during the COVID-19 pandemic induced lockdown to ascertain that the students suffer no academic loss and are able to make significant additions to their future even in these hard times. This new attempt from the Department of Physics in the shape of the current Newsletter is both innovative and noble at this hour since it would serve in stimulating the academic society and the ultimate beneficiaries i.e. the students and the research scholars at these tiring hours. I wish all the very best for present and give all the good luck for future to the Department of Physics for all their committed efforts.

Dr. A. Ranganath

Registrar,

The ICFAI University Tripura



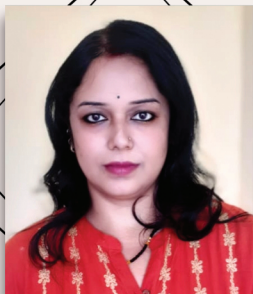
From the Desk of the Dean, Faculty of Science & Technology

I am elated to hear that the Department of Physics, ICFAI Science School is going to publish its annual Newsletter. This is the first issue of department's Newsletter showcasing the various activities performed by the department in its path of progress.

This department was established in the year 2018. Since its day of inception, department is receiving overwhelming response from the students. Department is equipped with innovative curriculum following UGC's CBCS system, state of the art laboratory facility and highly qualified research oriented faculty members. Apart from learning prescribed courses, students receive excellent training for competitive examinations like JAM/GATE/NET. They are also trained for a variety of career opportunities including careers in the industry, academia, research and other government and non-governmental organizations.

I congratulate Dr. Beauty Pandey, issue editor of the Department of Physics newsletter 'Reflections' and all the department faculty members for publishing this annual newsletter.

Priyanshu Rana Borthakur
Dean, Faculty of Science & Tech
The ICFAI University Tripura



From the Editor's Desk

Compiling and completing this news-letter "Reflections" in a competent manner would have not been possible had it not been for the contribution of my efficient editorial team and the support of my Institution. "Reflections" has been an honest effort from the Department of Physics, ICFAI University Tripura in forming a bridge between the flow of thoughts, technical expertise and artistic magnification of all its contributors. It also aims to highlight the educational, cultural, sports and extra-curricular activities of the students and faculty of Department of Physics. In the novelty of its conception, in the brilliance of its writing and presentation and in its dedication to accuracy, healthy discussion and editorial equilibrium, "Reflections" is an endeavour to mirror the values and the quality of the Department of Physics itself. This newsletter hopes to not only maintain the respect and interest of its readers, but also aspires to inform their opinion of the Institution as well as strengthen their commitment to its welfare. I believe that the newsletter with its inception will be successful in its commitment to offer its readers a mix of newsworthy, engaging, and thought-provoking articles about the department and its people. With these few words, I, along with the entire editorial board present to you all "Reflections", the first annual newsletter of Department of Physics, ICFAI University Tripura with the assurance of being the most suitable platform of showcasing and applauding the achievements and creativity of its students and faculty. The newsletter in its present form is due to the combined efforts of all its contributors, I take this opportunity to thank everyone for their contributions which makes this newsletter endearing to its readers. The enthusiasm to exchange knowledge, the willingness to share concerns and the keenness to discourse insights has made this newsletter possible.

Thank you all !!

With warm regards

Beauty Pandey

Dr. Beauty Pandey
Editor of Reflections

Department of Physics Newsletter

ABOUT THE DEPARTMENT OF PHYSICS

The Department of Physics was established as a separate department under ICAFI Science School in August of 2018, it has never looked back. Ever since its inception, the Department has not only been overcoming hurdles through its sincere perseverance and hard work but has also been committed to endorse and nurture young scientific minds towards the beauty of physics. Department currently consists of highly qualified faculty members who have been actively involved in cutting edge research in various emerging fields, and in developing state of art technologies. The dynamic faculty members with their dedication and painstaking care have been involved towards breeding a genre of students who will be able to independently think and excel in their area of choice. Presently we are offering Bachelors (B.Sc-Honors), Masters (M.Sc) and Doctorate (Ph.D) courses. Students have been encouraged to join various esteemed institutions for their internship projects. Masters Projects are being conducted in numerous active research areas utilizing the Departmental facilities. To keep the students well informed about the recent trends in research and to enhance their presentation/academic skills as well as to inculcate the ability of entrepreneurship, numerous seminars are being conducted by the department throughout the year. We aim to impart quality education and research environment to the students that would lead to their overall development in next coming years. The Department of Physics envisages itself in becoming a Center of Excellence in the near future under the hood of ICAFI University Tripura.

PROGRAMS OFFERED:

- **B.Sc. (Honours) Physics:** The B.Sc. (Physics) program is designed for six semesters (three years) to provide a systematic understanding of core physical concepts, principles and theories along with their applications. The first batch of B.Sc. had 24 students while the second batch of B.Sc. has 47 students.

- **M.Sc. Physics:** The M.Sc. (Physics) program is designed for four semesters (two years) in a way that a good basic foundation of subjects is laid and applications along with recent developments are covered. The M.Sc. program aims to train the students such that they can make career in R&D, industries and academic institutions. The first batch of M.Sc. had 27 students while the second M.Sc. batch has 41 students.

- **Ph.D. (Physics):** The Ph.D. program in Physics has been the newest addition to the Department. It has been designed for individuals who want to seek greater depth of knowledge of Physics and want to contribute towards the overall enhancement of science and technology. It would empower them with the ability to work in research and would enable them to create fresh knowledge, discover new things and develop new skills. By obtaining a PhD in Physics, the candidates would acquire the education, skills, and hands-on experience necessary to access several careers within the field of physics.

HIGHLIGHTS OF THE DEPARTMENT

- Undergraduate, Postgraduate and Doctor of Philosophy degrees are offered
- Highly qualified faculty
- Well-equipped Laboratory facility
- Research and publications in emerging research areas
- Seminars by highly qualified experts from all over India and abroad
- Preparatory classes for competitive examinations (NET, GATE etc.)

GLIMPSE OF EXPERIMENTAL PHYSICS LAB



To measure the self inductance (L) of a coil



To determine the Plank's constant (h)



To determine the Hall Coefficient



Dielectric Constant of BaTiO₃



To determine Bohr Magneton (μ_B)



To determine the coefficient of viscosity (η)

AREAS OF RESEARCH

- Fluorescence Spectroscopy
- Condensed Matter Physics
- Experimental Condensed Matter Physics
- Time and Angle Resolved Photon Spectroscopy
- Quantum Field Theory
- Mathematical Physics
- Particle Physics
- Cavity quantum optomechanics
- Cavity QED
- Parity-time symmetry and CV quantum information.
- Experimental Nuclear Structure Physics
- Nanomaterials and Nanostructures
- Thin films and experimental material science
- Solar energy applications
- Ultracold atoms in optical lattices
- Bose-Einstein Condensates and Many body localization
- General Relativity and Gravitation
- Gravitational Lensing

ICFAI FAMILY

ICFAI Family- Welcomes the newly joined faculty members in the Department of Physics



Dr. Arunabha Saha

Assistant Professor (Physics),
Faculty of ICFAI Science School,
ICFAI University Tripura

Dr. Arunabha Saha joined as an Assistant Professor in Department of Physics, Faculty of ICFAI Science School, ICFAI University Tripura on 20th January 2020.

Previously, he was working as a Post-Doctoral Fellow at IIT Bombay, Mumbai. He obtained his PhD degree from Homi Bhabha National Institute (HBNI), Mumbai by carrying out his research work in the field of Experimental Nuclear Physics at Variable Energy Cyclotron Centre (VECC), Kolkata. He has qualified UGC-JRF-NET. He has published 12 research articles in reputed International SCI Journals (viz., Physical Review C, Journal of Physics G, Nuclear Physics A, European Physical Journal A etc.) so far. He has delivered talks at various International Conferences such as Paris (France) and Legnaro National Laboratory (LNL), Legnaro (Italy). He has worked in close collaboration with various international laboratories like Université de Strasbourg (France), Marie Curie-Skłodowska University (Poland), Kyushu University (Japan), Laboratori Nazionali di Legnaro (Italy) and various national laboratories like Tata Institute of Fundamental Research (Mumbai), Inter-University Accelerator Centre (New Delhi), Saha Institute of Nuclear Physics (Kolkata) etc. His area of research includes Experimental Study of Nuclear Structure using γ -ray spectroscopy, Lifetime measurements, β -decay endpoint energy measurements.



Dr. Sk Noor Nabi
Assistant Professor (Physics),
Faculty of ICFAI Science School,
ICFAI University Tripura

Dr. Sk Noor Nabi has joined as an Assistant Professor in Department of Physics, Faculty of ICFAI Science School, ICFAI University Tripura on 10th September, 2020.

Before joining ICFAI Tripura, he was working as a post doctoral fellow (PDF) from January 2019 to February 2020 at Zhejiang Institute of Modern Physics and Department of Physics, Zhejiang University, China. Dr. Nabi completed his PhD from Indian Institute of Technology Guwahati (IITG) in 2018. He completed his M.Sc from IIT Guwahati in 2013 and B.Sc (H) from Vidyasagar University in 2011. He was awarded Gold medal from Vidyasagar University for securing 1st position throughout the entire course duration of three years of B.Sc (H) in 2012. He also received "Certificate of Honours" by West Bengal College and University Teacher's Association in 2013. He received "Best Poster Award" at 60th Department of Atomic Energy-Solid State Physics Symposium (DAE-SSPS) '2015. He qualified the National Graduate Physics Examination in 2011 conducted by Indian Association of Physics Teacher's (IAPT). He cracked the National Eligibility test (NET) in 2013 and GATE in 2014. His research is primarily focused on Ultracold atoms in optical lattices, Bose-Einstein Condensates and Many body localization.



Dr. Suvankar Paul
Assistant Professor (Physics),
Faculty of ICFAI Science School,
ICFAI University Tripura

Dr. Suvankar Paul has joined as an Assistant Professor in Department of Physics, Faculty of ICFAI Science School, ICFAI University Tripura on 11th September, 2020. He completed his B.Sc. (Honours) in Physics from A.B.N. Seal College, Coochbehar (under the affiliation of University of North Bengal). He, then, joined IIT Kanpur and obtained his Masters in Physics from there. He pursued his Ph.D. also in the Department of Physics, IIT Kanpur. His main area of research is to study different aspects of General Relativity and Gravitation. For example, he is currently working on distinguishing various ultra-compact objects like Black Holes, Wormholes, Naked Singularities, etc., using Gravitational Lensing, Shadows, Accretion Disk Images, Tidal Effects etc. During his Ph.D tenure, he has published seven manuscripts in high-impact, leading International Journals, and a few others are currently under review. He has also participated in a school on Gravitational Waves at the International Centre for Theoretical Sciences (ICTS), Bangalore and presented a paper at an International Conference on Gravity (GR22 - AMALDI13) in Valencia, Spain. He is highly motivated to continue his research further in the cutting-edge, frontline areas in Gravity.

EVENTS

National Workshop on "Introductory Workshop on Physical Perspectives of Astronomy (IWPA-2019)"

The Department of Physics, ICFAI University, Tripura in association with Department of Physics, Tripura University organised a two day national workshop entitled "Introductory Workshop on Physical Perspectives of Astronomy (IWPA-2019)" on 30th and 31st October, 2019. This workshop was sponsored by The Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune and was held to generate interest in Astronomy and Astrophysics, amongst upcoming budding students of B.Sc. and M.Sc. of Tripura in particular and Northeast India in general. Prof. Ranjeev Misra (IUCAA, Pune), Dr. Santabrata Das (IIT Guwahati), Dr. Himadri Sekhar Das (Assam University), Dr. Biswajit Paul (NIT Agartala), Dr. Ratan Das (Tripura University) and Dr. Biplob Sarkar (ICFAI University, Tripura) were the esteemed resource persons of this event. The workshop was a grand success and the participants were greatly benefited from the workshop. They came to know about the recent trends of astronomy and astrophysics and could personally interact with the experts of the field. A special lecture on Contribution of Michel Mayor and Didier Queloz, 2019 Nobel laureates, to discovery of exoplanets was delivered by Dr. Santabrata Das. The participants also got familiar with the first Indian Astronomy satellite AstroSat and the roles it is playing towards our understanding of the universe. The workshop was concluded with the hope that the little discussions and interactions among participants as well as resource persons will grow into successful research collaborations.



Presence of **Dr. P.R. Borthakur**, Dean, FST, Prof. **Ranjeev Misra**, Professor, The Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, **Dr. Anirban Guha**, Assistant Professor, Dept. of Physics, Tripura University and **Dr. Biplob Sarkar**, Asst. Prof., Dept. of Physics, ICFAI University, Tripura during Inauguration of an introductory workshop on "Physical Perspectives of Astronomy (IWPPA - 2019)" organized by Department of Physics, ICFAI University, Tripura jointly with Department of Physics, Tripura University held on 30.10.2019.



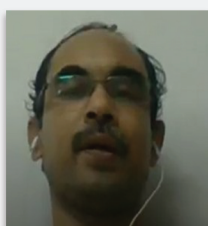
A group photo of the participants of the workshop "Physical Perspectives of Astronomy (IWPPA – 2019)" organized by Department of Physics, ICFAI University, Tripura jointly with Department of Physics, Tripura University held on 30.10.2019.



Dr. Ranjeev Misra (IUCAA) with the students of ICFAI University (Tripura) at the workshop, "Physical Perspectives of Astronomy (IWPPA – 2019)" at the premises of ICFAI University Tripura.

Webinar on "The Fascinating World of Nanomaterials"

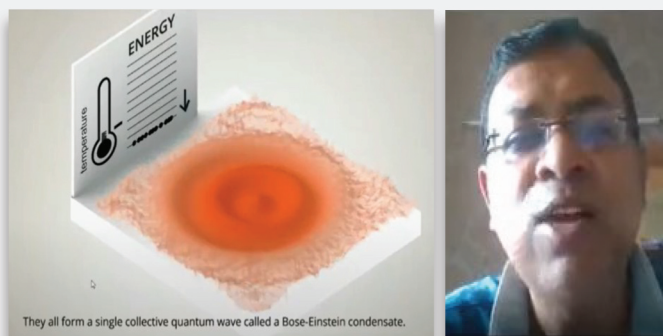
The Department of Physics successfully organized a webinar on "The Fascinating World of Nanomaterials" on 25th May, 2020. Dr. Somnath Chanda Roy, Associate Professor, Department of Physics, Indian Institute of Technology Madras was the invited resource person who enlightened us with the fascinating world of nanomaterials. The webinar was aimed at Btech/B.Sc/M. Sc. students as well as faculty members with objective to introduce the basics of nanophysics and nanotechnology to beginners as well as to demonstrate the recent advances in the field of nanomaterials in terms of synthesis and applications. The talk remained focussed on the properties, attributes and application of nanomaterials in diverse arenas. He also explained in details that how the nanomaterials are synthesized and demonstrated the different forms of nanoarchitectures such as nanotubes, nanowires. To summarise, TiO₂ nanostructures-based nanocomposites for photocatalytic applications were explored. The future of photocatalysis using Graphene wrapped TiO₂ nanotubes were also speculated. Graphene wrapped TiO₂ nanotubes are shown to exhibit enhanced photocatalytic efficiency due to the increase transport and separation. Additionally, the role of photocatalytic reduction of CO₂ as the emerging technology in environmental remediation was also presented.



Dr. Somnath Chanda Roy

Webinar on "Bose-Einstein Condensation – The story for the last 100 years"

The Department of Physics successfully organized webinar entitled "Bose-Einstein Condensation" on 24th September, 2020. Dr. Saurabh Basu, Professor, Department of Physics, Indian Institute of Technology Guwahati, was the esteemed speaker of the webinar.

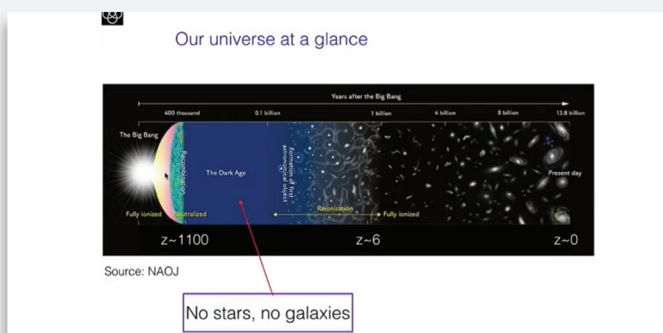


Prof. (Dr.) Saurabh Basu

The webinar was aimed at Btech/B.Sc/M. Sc. students as well as faculty members to make them familiar with Bose-Einstein Condensation and their development story for the last 100 years. The objective of the webinar was to introduce the basics of Bose-Einstein Condensation to beginners as well as to demonstrate the recent advancements in the field. Professor Basu gave an ever-encompassing description of the Bose-Einstein Condensation and discussed the physical principles that led to the discovery of BEC and the large efforts that are required to realize them in laboratories. In the course of his presentation, he emphasized the role of Bose in the who episode, who is often regarded as a 'forgotten hero'. The speaker shared with us the formation of the BEC theory. The speaker also explained to the audience, what is Bose-Einstein condensate and also introduced to us the strange properties of BECs that have many possible applications in future technologies.

Webinar on "The Landmark Discovery of a far away Galaxy using the Indian ASTROSAT Space Observatory"

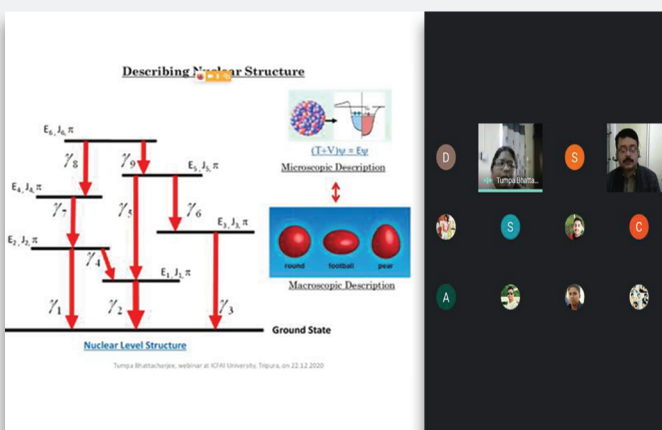
The Department of Physics organized webinar entitled "The Landmark Discovery of a faraway Galaxy using the Indian ASTROSAT Space Observatory" on 14th October, 2020. Dr. Kanak Saha, Assistant Professor of Astronomy at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune discussed the landmark achievement of Indian astronomers where they have discovered one of the farthest galaxies in the universe.



The galaxy called AUDFs01 located 9.3 billion light-years away from Earth was discovered by a team of international astronomers led by Dr Kanak Saha with the aid of India's first Multi-Wavelength Space Observatory "ASTROSAT". They detected extreme-UV light from this galaxy and the importance and uniqueness of this original discovery can be made out from the fact that it has been reported in the leading international journal Nature Astronomy. This observation is a very important clue as to how the dark ages of the Universe ended and discovers one of the earliest galaxies in extreme-Ultraviolet light that marks a major breakthrough in developing a theory about the origin of light in the Universe.

Webinar on "Exploring Nuclear Structure - following the path of Gamma Ray Spectroscopy"

The Department of Physics organized webinar entitled "Exploring Nuclear Structure - following the path of Gamma Ray Spectroscopy" on 22nd December, 2020. Dr. Tumpa Bhattacharjee, Scientific Officer G, Experimental Nuclear Physics Division, Variable Energy Cyclotron Centre, Kolkata was the esteemed resource person for this talk. More than hundred participants which included students and faculty members attended this webinar. Exploring the fascinating variety of structures processed by the many body quantum system of a nucleus is one of the topics of forefront research in nuclear physics. The footprints of such structure carried away by the emitted gamma radiation from the excited nuclear levels are captured through different types of radiation detectors. In this presentation, the origin of the structural variety and their relation to the basic properties of the constituent nucleons were unveiled. The experimental efforts through different developments of gamma arrays and their use in India and abroad were discussed. Some of the important experimental findings of recent time were also unfolded in this talk.



Dr. Tumpa Bhattacharjee

Celebration of National Science Day'2020

The ICFAI Science School celebrated National Science Day'2020 on 28th February, 2020. National Science Day is being celebrated throughout India since 1987 to commemorate the invention of Raman Effect by Dr. CV Raman. The theme for the event this year was "Women in Science".

On this event, we organized Quiz competition, Poster competition, Science Model competition, Best of the Waste competition for undergraduate and postgraduate students. To spread awareness and popularize science, we also organized several popular science talks by students and faculties. The response from the students and participants were overwhelming. Dean, FST, Dr. P. R. Borthakur delivered a highly motivational speech discussing the history of science day and its importance. He also encouraged everyone to fulfill their roles and duties towards the society. A short and interesting biography of the eminent scientist C. V. Raman was shared with the audience to motivate them to stay on the right path of science and fight superstition in society. Our chief guest Dr. Alok Satpathy has described the difference between science and technology nicely. He highlighted the massive development in science and technology over recent years in Tripura as well as in India and abroad. Dr. Beauty Pandey from the Assistant Professor, Department of Physics, has delivered lecture on "Beyond Marie Curie: exemplary women who created history in science". She not only discussed about the contribution of the renowned woman scientist but also motivated the students to work relentlessly for science. Dr. Tufan Singha Mahapatra from the Department of Chemistry presented a talk on "Women of The Periodic Table" where he threw light on the contribution of women scientists in the development of periodic table.



Lightening of Lamp by Dr. Alok Satpathy, Dr. Priyangshu Rana Borthakur and Dr. Swarnali Nath in the inaugural session of the National Science Day



Dr. Beauty Pandey presenting in the inaugural session of the National Science Day Celebration, 2020.



Inaugural Song by B.Sc. students on the occasion of National Science Day celebration, 2020.



Prize distribution ceremony: B. Sc. Physics 1st year students won the science model competition and they are receiving the award from Dr. Arundhati Bai.

SCIENTIFIC PUBLICATIONS

All the faculty members from the Department of Physics are devoted to Research related activities and during this course of time (October 2019- October 2020), the faculty members published total 12 research articles in reputed international journals. In the span of last one year all the faculty members have been dedicated to high quality research and have resulted in publication of a majority of articles in journals of international repute. Additionally, the dynamic faculty of the department has been also successful in establishing and strengthening wide collaborations nationally as well as on internationally.

Dr. Beauty Pandey, Assistant Professor, Department of Physics has published three research articles in international journals of repute. The publications are enlisted in SCI indexed journals with high impact factor. She has been successful in creating befitting collaborations with IIT Madras, IIT (ISM) Dhanbad, CSIR-CEERI Pilani, CEGESS-IEST Shibpur during this time span.

Dr. Arunabha Saha, Assistant Professor, Department of Physics has published three research articles in SCI indexed international journals. He has productive collaborations with Variable Energy Cyclotron Centre (Kolkata), Saha Institute of Nuclear Physics (Kolkata) etc.

Dr. Ganesh Adhikary, Assistant Professor, Department of Physics has published one research article with international collaboration in a highly indexed SCI journal.

Dr. Sandip Majumdar has published four research articles in international journal.

Dr. Biplob Sarkar has published one research article in international journal.

The Department of Physics produced a total of eleven international publications during October 2019 to October 2020. The brief summary of these outstanding scientific achievements are glimpsed here for the budding enthusiasts in the department.

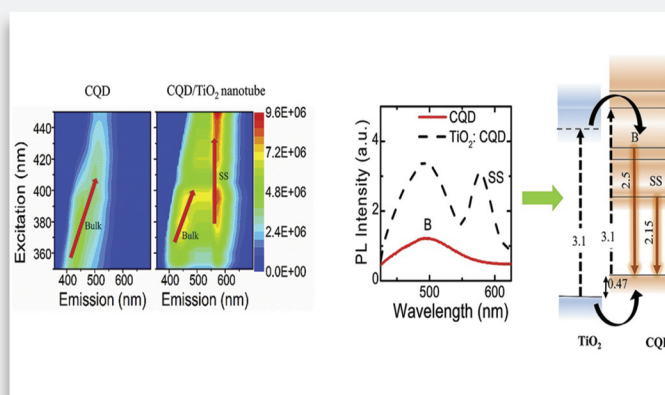
PUBLICATIONS

Jayeeta Bhattacharyya, Anu Babusenar, B. Pandey, Somnath C. Roy; Charge transfer mediated photoluminescence enhancement in carbon dots embedded in TiO₂ nanotube matrix, Carbon 2020 161, 535-541

DOI: <https://doi.org/10.1016/j.carbon.2020.01.097>

Publisher: Elsevier; Impact Factor: 8.821

Summary: Carbon quantum dots (CQDs) have drawn a lot of attention in recent years for imaging applications due to their luminescence properties in the visible range. There has been a strong thrust in achieving CQDs with enhanced luminescence efficiency. We report nearly three times increase in the total photoluminescence emission of CQD films by depositing them on TiO₂ nanotube (NT) substrates, instead of glass. The net increase in PL arose from higher CQD core emission and the appearance of a strong surface state emission. High-resolution X-ray photoelectron spectroscopy (XPS) was employed to analyze the composition of the CQD surfaces, which confirmed more carboxyl groups on the surface of CQD in the CQD:NT composite. The band alignment of the composite, determined from XPS measurements, favoured carrier transfer from TiO₂ NT to CQD. The TiO₂ NT, having better surface coverage and wide absorption spectrum, had high absorption cross-section. The efficient transfer of the carriers from NT to CQD is found to be the dominant phenomenon leading to a significant increase in the PL emission intensity.

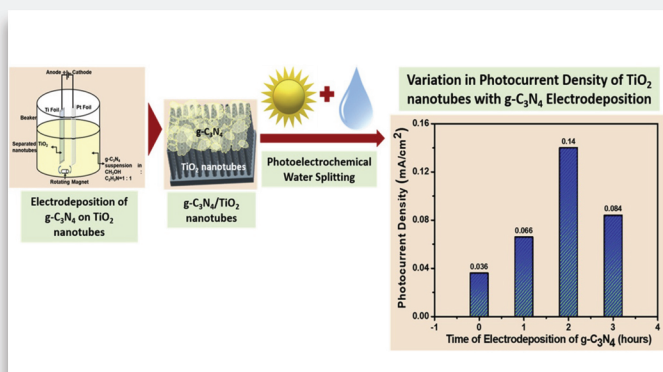


B. Pandey, Sanju Rani, Somnath C. Roy; A scalable approach for functionalization of TiO₂ nanotube arrays with g-C₃N₄ for enhanced photo-electrochemical performance, Journal of Alloys and Compounds 2020 846, 155881

DOI: <https://doi.org/10.1016/j.jallcom.2020.155881>

Publisher: Elsevier; Impact Factor: 4.650

Summary: Graphitic carbon nitride ($g\text{-C}_3\text{N}_4$) has manifested itself as an effective counterpart of titanium di-oxide (TiO_2) to extend its photoactivity in the visible range. In this work, $g\text{-C}_3\text{N}_4$ functionalized TiO_2 nanotubes were synthesized by electrodeposition of $g\text{-C}_3\text{N}_4$ in bulk on TiO_2 nanotubes from a continuously rotating organic suspension at a moderate voltage. Additionally, samples with varying time durations were also synthesized to examine the effect of electrodeposition time on the performance of $g\text{-C}_3\text{N}_4$ functionalized TiO_2 nanotubes. Photo-electrochemical measurements demonstrated strong light induced activity and maximum photoresponse for $g\text{-C}_3\text{N}_4$ functionalized TiO_2 nanotubes was upto 4 factors higher than bare TiO_2 nanotubes. The crystallinity, morphology and chemical compositions were investigated by XRD, FESEM and XPS respectively. Further, the optical absorption edge, chemical bonds and defects states were evaluated by UV-visible, Raman, FTIR, PL and EPR spectroscopy. The properties of $g\text{-C}_3\text{N}_4/\text{TiO}_2$ system were correlated with the photocurrent behaviour and a mechanism of the probable role of vacancies and defects in their photo induced activity has been proposed. The study has established a simple and scalable scheme for the functionalization of TiO_2 nanotube with $g\text{-C}_3\text{N}_4$ to achieve enhanced photo-electrochemical properties.



Vikas Sharma, Athrey C Dakshinamurthy, Beauty Pandey, Somnath C Roy and C Sudakar; Effect of oxygen nonstoichiometry on the photoelectrochemical performance of oxide-nanorod based $\text{TiO}_2/\text{Sb}_2\text{S}_3$ and $\text{ZnO}/\text{Sb}_2\text{S}_3$ heterostructured photoanodes, Nano Express 2020 1, 030038

DOI: <https://doi.org/10.1088/2632-959X/abd2d3>

Publisher: IOP Science

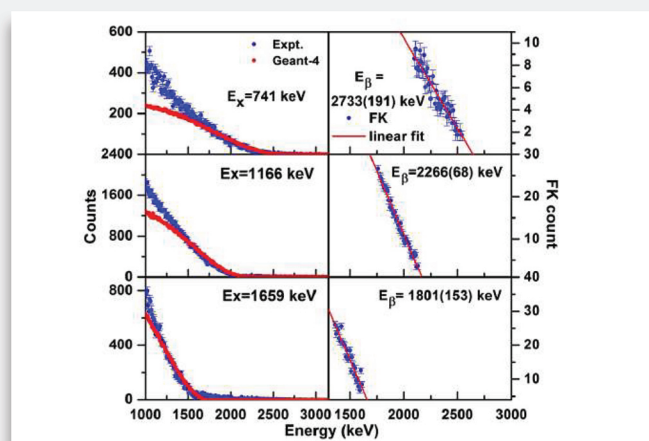
Summary: Single crystalline ZnO and TiO_2 nanorods are grown on fluorine-doped tin oxide (FTO) substrates by hydrothermal method. The nanorods are annealed under air and reducing conditions to alter the oxygen nonstoichiometry and hence the mid-bandgap defect states. Such an annealing process is shown to impart significant change on the photoelectrochemical (PEC) performance of the photoelectrodes. Large photocurrent densities (J) of 0.78 mA cm^{-2} are obtained for air annealed (AA) TiO_2 nanorods (TNR) compared to hydrogen annealed (HA) TNR ($J = 0.36 \text{ mA cm}^{-2}$). ZnO nanorods (ZNR), on the contrary, shows photocurrent density of 0.76 mA cm^{-2} and 0.36 mA cm^{-2} for ZNR-HA and ZNR-AA photoanodes, respectively. The contrasting difference in the PEC performance is attributed to the synergistic effect of interfacial impedance with electrolytes and the oxygen nonstoichiometry. Further, to overcome the limitation of

light absorption by these materials owing to their wide band-gap, TiO_2 and ZnO nanorods are coated with Sb_2S_3 by chemical bath deposition to form heterostructured TNR-AA/ Sb_2S_3 (CBD) and ZNR-HA/ Sb_2S_3 (CBD) thin films. Such heterostructures exhibit enhanced photocurrent values of $\sim 1.39 \text{ mA cm}^{-2}$ and 3.36 mA cm^{-2} (at 1.6 V versus Ag/AgCl), respectively. The PEC performances of the nanorods are analyzed in terms of the annealing conditions and subsequent introduction of defect states in the bandgap. The present study shows the importance of oxygen defect control at the interface between the oxide and chalcogenide, and its role in the betterment of PEC performance in $\text{TiO}_2/\text{Sb}_2\text{S}_3$ and $\text{ZnO}/\text{Sb}_2\text{S}_3$ heterostructure photoanodes.

A. Saha, T. Bhattacharjee, D. Banerjee, Deepak Pandit, P. Das, Soumik Bhattacharya, R. Guin, S. K. Das, S. R. Banerjee; β – decay endpoint energy measurement in $^{150}\text{Pm} \rightarrow ^{150}\text{Sm}$ using β – γ coincidence; European Physical Journal A 2020 56, 189
DOI: <https://doi.org/10.1140/epja/s10050-020-00194-w>

Publisher: Springer; Impact Factor: 2.176

Summary: The β -decay endpoint energies, corresponding to several decay branches of ^{150}Pm ground state, have been measured for the first time by using the β – γ coincidence technique with an array of two thin window LEPS and four Clover HPGe detectors of the VENUS array. This is also considered as the first outcome towards the research planned at VECC, Kolkata, on the search and characterization of long lived β decaying isomeric states through β - γ spectroscopy.



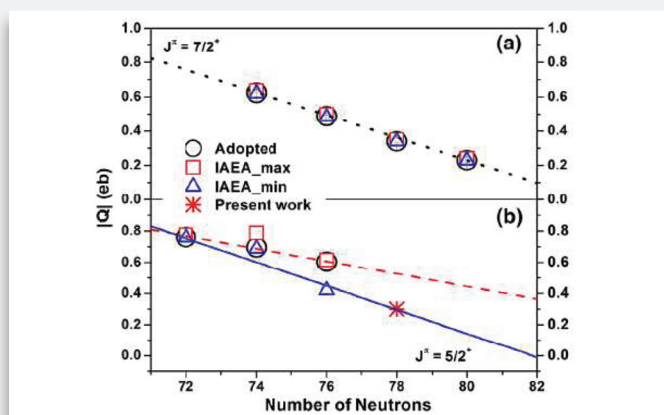
S. S. Alam, D. Banerjee, T. Bhattacharjee, P. Blaha, D. Kumar, A. Saha, M. Saha Sarkar, S. Sarkar, S. K. Das; Measurement of electric quadrupole moment in neutron rich $^{131,132}\text{I}$, European Physical Journal A 2020 56, 269.

DOI: <https://doi.org/10.1140/epja/s10050-020-00281-y>

Publisher: Springer; Impact Factor: 2.176

Summary: The quadrupole moments of the excited levels in neutron rich Iodine isotopes, viz., ^{131}I ($5/2_1^+$) and ^{131}I (3_1^+) have been measured with $\text{LaBr}_3(\text{Ce})$ detectors using Time Differential Perturbed Angular Correlation (TDPAC) spectroscopy. The excited levels were populated from β -decay of the radio-chemically separated tellurium (Te) fission products produced in $^{235}\text{U}(^4\text{He}, \text{fission})$ reaction at $E_\alpha(\text{lab}) = 40 \text{ MeV}$ from K-130 Cyclotron at VECC, Kolkata. The active tellurium fission products were radio-chemically doped in

metallic tellurium matrix to provide the necessary Electric Field Gradient required for TDPAC measurement. The values of quadrupole moments for the $5/2_1^+$ level of ^{131}I and 3_1^+ level of ^{132}I were determined to be $(-0.30(1) \text{ eb})$ and $(-0.25(2) \text{ eb})$, respectively. The present measurement provides the first experimental determination on the electric quadrupole moment of $5/2_1^+$ level of ^{131}I .



Sangeeta Das, Anik Adhikari, S. S. Alam, Sathi Sharma, Suman Aich, Arkabrata Gupta, Y. Sapkota, Ananya Das, **A. Saha**, S. K. Dey, Dibyadyuti Pramanik, Abhijit Bisoi, Indrani Ray, T. Bhat-tacharjee, C. C. Dey, S. Sarkar, M. Saha Sarkar; Decay spectroscopy of $^{117,118}\text{Sn}$; Nuclear Physics A2020 xx, xx

DOI: <https://doi.org/10.1016/j.nuclphysa.2020.122079>

Publisher: Elsevier; Impact Factor: 1.695

Summary: The low-lying states of $^{117,118}\text{Sn}$ have been studied from the decay of $^{117g,118m}\text{Sb}$, and ^{117m}Sn . These long-lived species were populated through the reaction $^4\text{He} + ^{nat}\text{In}$ at $E_{\text{lab}} = 32 \text{ MeV}$. Singles, as well as γ - γ coincidence data, were acquired. The uncertainties in the placement of some of the γ -rays in the excitation spectra of ^{118}Sn observed by previous workers have been removed. A γ -ray (984 keV) previously assigned to ^{118}Sn has been eliminated from the level scheme, based on the present analysis. The decay half-lives of $^{117g,118m}\text{Sb}$ have been re-measured. The slope method and de-convolution technique have been used to determine the half-lives of a few isomeric states in $^{117,118}\text{Sn}$. The results are interpreted in the framework of large scale shell model calculations performed in the 50-82 valence shell using truncations. Although the excitation energies were not reproduced well, the theoretical calculations could reasonably reproduce the isomers' transition probabilities due to their nearly pure configuration.

Kalobaran Maiti, Tathamay Basu, Sangeeta Thakur, Nishaina Sahadev, Deepnarayan Biswas, Ganesh Adhikary, Yiku Xu, W Löser and E V Sampathkumaran; Electronic structure studies on single crystalline Nd_2PdSi_3 , an exotic Nd-based intermetallic: evidence for Nd 4f hybridization, Journal of Physics: Condensed Matter202032, 46

DOI: <https://iopscience.iop.org/article/10.1088/1361-648X/a-ba982/meta>

Publisher: IOPscience; Impact Factor:2.707

Summary:In the series R_2PdSi_3 , Nd_2PdSi_3 is an anomalous compound in the sense that it exhibits ferromagnetic order unlike other members in this family. The magnetic ordering temperature is also unusually high compared to the expected value for a Nd-based system, assuming 4f localization. Here, we have studied the electronic structure of single crystalline Nd_2PdSi_3 employing high resolution photoemission spectroscopy and ab initio band structure calculations. Theoretical results obtained for the effective on-site Coulomb energy of 6 eV corroborate well with the experimental valence band spectra. While there is significant Pd 4d–Nd 4f hybridization, the states near the Fermi level are found to be dominated by hybridized Nd 4f–Si 3p states, which is possibly responsible for the ferromagnetism in Nd compound. Nd 3d core level spectrum exhibits multiple features manifesting strong final state effects due to electron correlation, charge transfer and collective excitations. These results serve as one of the rare demonstrations of hybridization of Nd 4f states with the conduction electrons possibly responsible for the exoticity of this compound.

Yannan Xu, Jinshun Bi, Yudong Li, Kai Xi, Linjie Fan, Ming Liu, **M. Sandip**, Li Luo; The total ionizing dose effects of X-ray irradiation on graphene/Si Schottky diodes with a HfO_2 insertion layer, Microelectronics Reliability2019100–101, 113355

DOI: <https://doi.org/10.1016/j.microrel.2019.06.047>

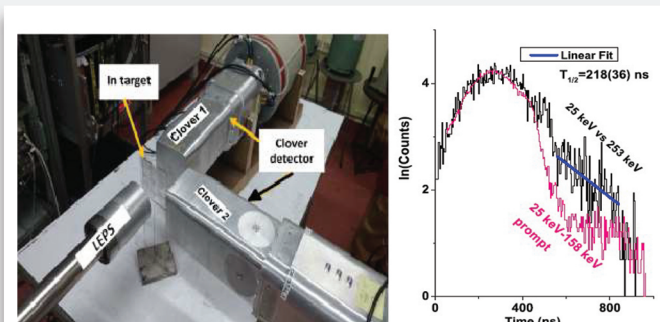
Publisher:Elsevier;Impact Factor:1.535

Summary:The total ionizing dose (TID) effects of X-ray irradiation on graphene/ HfO_2 /Si (Gr/ HfO_2 /Si) Schottky diodes were investigated. The I-V characteristics were studied in detail with different bias conditions during TID irradiation. An increase in the ideality factor and decrease in the Schottky barrier height were observed. Compared with traditional graphene/Si (Gr/Si) Schottky structures, the degradation of electrical characteristics can be effectively suppressed by adding a HfO_2 insertion layer between graphene and the Si substrate.

Guoliang Tian, Jinshun Bi*, Gaobo Xu*, Kai Xi, Xueqin Yang, **Majumdar Sandip**, Huaxiang Yin, QiuxiaXu&Wenwu Wang; Single-event-transient effects in silicon-on-insulator ferroelectric double-gate vertical tunneling field effect transistors, Science China Information Sciences 202063, 229403

DOI:<https://doi.org/10.1007/s11432-019-2716-5>

Publisher:Springer;Impact Factor:3.304



Summary: The mechanisms of SET in DG-FeTFET were investigated by TCAD simulation to assess the impact of the LET and the bombardment location of heavy ion on the transient responses. For LET larger than 10 MeVcm²/mg, the maximum drain current is higher than the on-state current for DG-FeTFET. Thus, the DG-FeTFET is more susceptible to SET. These results can provide some useful guidance for the design of DG-FeTFET-based anti-radiation logic circuits design.

Linjie Fan, Jinshun Bi, Yannan Xu, Kai Xi, Yao Ma, Ming Liu, Sandip Majumdar; Cryogenic characterisation of 55 nm SONOS charge-trapping memory in AC and DC modes, Electronics Letters 202056, 199-201

DOI: <https://doi.org/10.1049/el.2019.3229>

Publisher: IET; **Impact Factor:** 1.343

Summary: The electrical responses of 55 nm silicon-oxide-nitride-oxide-silicon (SONOS) memory cells have been investigated under cryogenic conditions, and the changes of the read curves of SONOS in AC mode (programmed/erased with pulse voltage) and DC mode (programmed/erased with direct voltage sweeping) at low temperatures are compared. The experimental results show that with the decrease of temperature, the sub-threshold swing of SONOS decreases, whereas the on-state current of SONOS increases. The difference in AC and DC operations causes the threshold voltage of the read curve to drift accordingly, leading to the different change in the memory window. However, in both modes of operations, the efficiencies of programming and erasing decrease at cryogenic temperatures. It is analysed that the reduction of programming efficiency at cryogenic temperatures is caused by the decrease in the quantity of pre-tunneling electrons. The reduction in erasing efficiency is attributable to the suppression of the Poole-Frenkel effect at low temperatures, which makes it more difficult for electrons to be de-trapped.

Jianjian Wang, Jinshun Bi*, Gang Liu, Hua Bai, Kai Xi, Bo Li, Sandip Majumdar, Lanlong Ji, Ming Liu & Zhan-gang Zhang, Simulations of single event effects on the ferroelectric capacitor-based non-volatile SRAM design, Science China Information Sciences 2021 64, 149401

DOI: <https://doi.org/10.1007/s11432-019-2854-9>

Publisher: Springer; **Impact Factor:** 3.304

Summary: The SEEs on a ferroelectric Hf_{0.5}Zr_{0.5}O₂ capacitor-based nvSRAM have been simulated and analyzed. In the "power-off" phase, whether the data can be recalled successfully depends on the injection time of the double exponential transient pulse. In addition, LET significantly affects the transient radiation responses of nvSRAM, if the LET value of the applied transient pulse is greater than the threshold LET, the data can be permanently flipped, resulting in soft errors. Given this observation, we can mitigate the SEEs on nvSRAM by optimizing the coercive voltage, residual polarization intensity, which are important parameters of the ferroelectric capacitor. These observations are useful for developing novel nvSRAM technologies aiming at space and defense applications.

Biplob Sarkar and Anjali Rao; Effect of magnetic flux advection on the dynamics of shock in accretion flow around a rotating black hole, Research in Astronomy and Astrophysics, 202020, 40

DOI: <https://doi.org/10.1088/1674-4527/20/3/40>

Publisher: IOPScience; **Impact Factor:** 1.254

Summary: We investigate the dynamical behavior of a magnetized, dissipative accretion flow around a rapidly rotating black hole. We solve the magnetohydrodynamic equations and calculate the transonic accretion solutions which may contain discontinuous shock transitions. We investigate the effect of ζ -parameter (parametrizing the radial variation of the toroidal magnetic flux advection rate) on the dynamical behavior of shocks. For a rapidly rotating black hole and for fixed injection parameters at the outer edge, we show that stationary shocks are sustained in the global magnetized accretion solutions for a wide range of ζ and accretion rate (\dot{m}). To investigate the observational implications, we consider dissipative shocks and estimate the maximum accessible energy from the post-shock corona (PSC) for nine stellar mass black hole candidates. We compare this with the observed radio jet kinetic power reported in the literature, whenever available. We find close agreement between the estimated values from our model and those reported in the literature.

ACTIVITIES

Summer Internship Programme

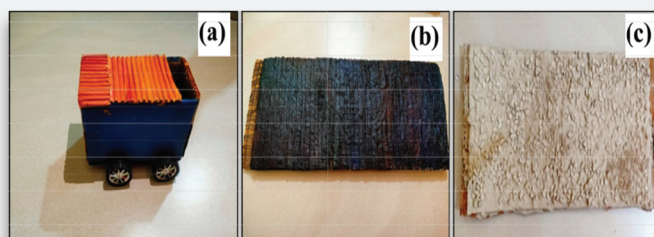
Summer internship project is the integral part of our B.Sc. and M.Sc. curriculum. Students of Department of Physics are doing their IP during the summer holidays and tenure is 45 days. Students can bag an internship through various means since our University gives ample opportunities to the students to interact with some prestigious institutes of India. During their internship the students have to submit a weekly report to their respective mentor and after the completion of their internship project students have to submit a final report. Internship project presentation is also conducted for the students. This year as a pandemic situation is going on, online internship projects has been arranged. Our students have done their internship projects from IIT Bombay (FOSSEE). They have done several computers related projects such as introduction to computers, Linux, C/C++ etc. Department of Physics floated various Summer IP Projects to keep the students occupied during the summer break. The projects were useful in enhancing skill, team spirit and knowledge amongst the students. Students are successfully completed the projects and awarded with certificates.

Physics is littered with the corpses of dead unified field theories.

-Freeman Dyson

Sl. No	Project Title	Program	Faculty Supervisor
01.	Phase-space diagram of classical motion	B.Sc (Physics) 1 st year	Dr. Tuhin Subhra Mukherjee
02.	Study of system of Coupled Oscillator	B.Sc (Physics) 1 st year	Dr. Tuhin Subhra Mukherjee
03.	Laser & Polarization	B.Sc (Physics) 1 st year	Dr. Camelia Das
04.	Determination of muon lifetime	B.Sc (Physics) 1 st year	Dr. Ganesh Adhikary
05.	Friction and how it affects the speed of vehicle on different surface	B.Sc (Physics) 1 st year	Dr. Beauty Pandey
06.	Black holes and determination of the effects of the temperature of the universe on Black Holes	B.Sc (Physics) 1 st year	Dr. Beauty Pandey
07.	How do Airplanes Fly	B.Sc (Physics) 1 st year	Dr. Arunabha Saha
08.	Wave functions and energy states of half harmonic oscillator	B.Sc (Physics) 2 nd year	Dr. Camelia Das
09.	Basics of waveguide and its application	B.Sc (Physics) 2 nd year	Dr. Camelia Das
10.	Analysis of YBa ₂ Cu ₃ O _{7-x} XRD Data	B.Sc (Physics) 2 nd year	Dr. Ganesh Adhikary
11.	Nuclear Fission and Fusion	B.Sc (Physics) 2 nd year	Dr. Arunabha Saha
12.	Quantum harmonic Oscillator in 2D and 3D	M.Sc (Physics) 1 st year	Dr. Tuhin Subhra Mukherjee
13.	Quantum Particle in delta function potential	M.Sc (Physics) 1 st year	Dr. Tuhin Subhra Mukherjee
14.	Mixed valence Manganites	M.Sc (Physics) 1 st year	Dr. Ganesh Adhikary
15.	Effect of shape engineering of semiconductor nanostructures for novel device applications	M.Sc (Physics) 1 st year	Dr. Beauty Pandey
16.	Solar fuels generation using III-V Semiconductors	M.Sc (Physics) 1 st year	Dr. Beauty Pandey
17.	Interaction of Nuclear Radiation with Matter	M.Sc (Physics) 1 st year	Dr. Arunabha Saha
18.	Four Fundamental Forces of Nature	M.Sc (Physics) 1 st year	Dr. Arunabha Saha
19.	SCILAB	B.Sc (Physics)	IIT Bombay (FOSSEE)
20.	LaTeX	M.Sc (Physics)	IIT Bombay (FOSSEE)

As a part of summer IP project, students of B.Sc-1st year (Physics) under the supervision of Dr. Beauty Pandey, made a project utilizing all the easily available items such as card boards, straw, balloons etc. The purpose of this project is to find out which surfaces and conditions create the least friction and make the balloon car move the farthest. After doing this internship students have concluded that the glass surface has the lowest friction whereas the carpet surface has the highest friction.



EXTRACURRICULAR ACTIVITY:

Students of Department of Physics, ICFAI University are very much active in extracurricular activities. For overall development of a student, curriculum is not the only criteria. The holistic growth and the various facets of the personality develops by these kinds of activity. This year, during the critical situation of epidemic our students have participated in many competitions and got success. Students of B.Sc and M.Sc of the Department of Physics have participated in various webinars actively

No.	Name of the student	Course	Participated in	Position Secured
1.	Shaheb Choudhury	B.Sc	Participated in Model Competition in National Science -2020 conducted by ICFAI University Tripura	Secured 1st place along with his groupmates for his excellent effort
2.	Shaheb Choudhury	B. Sc.	Attend a State Level Online Quiz on “ Engineering Mathematics-II” organized by the Department of Engineering Sciences , MET’S Institute of Engineering, BKC, Nashik in May 2020	—
3.	Shaheb Choudhury	B.Sc	Attended an online quiz competition organized by NEMCARE group of institution on COVID 19 pandemic in May 2020	—
4.	Shaheb Choudhury	B.Sc	Attended an online quiz competition organized by Tripura Institute of Technology on “Engineering Mathematics-II” in May 2020	Secured 84% marks on the competition.
5.	Shaheb Choudhury	B.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June 2020	—
6.	Shaheb Choudhury	B.Sc	Attended Two Day National Online Workshop on “Nano-materials and its Applications for Human and Environment”, organized by A.S College, Khanna in July 2020	—
7.	Debarpit Chakraborty	B.Sc	Directed inter school state level drama competition at ShishuBiharHSSchool and in March and April 2019	secured 1 st position
8.	Debarpit Chakraborty	B.Sc	Performed in Drama “Rajotithi” organized on the occasion of birthday of famous poet R.N Tagore and the shows continued in further the various cities like Kolkata, Silchar Bangalore Guwahati etc. during August, September 2019.	—
9.	Debarpit Chakraborty	B.Sc	Hosted the event of National Science Day organized by ICFAI University Tripura in February 2020	—
10.	Debarpit Chakraborty	B.Sc	Hosted the event of National Mother Tongue Day organized by ICFAI University Tripura in February 2020	—
11.	Debarpit Chakraborty	B.Sc	Performed in the Drama “RajarChokheGhumNei” under the guidance of NSD TIE WING in December 2019	—
12.	Debarpit Chakraborty	B.Sc	Participated in Inter College Science Drama Competition representing ICFAI University Tripura in May 2020	secured 2 nd position

13.	Debarpit Chakraborty	B.Sc	Attended a mime workshop organized by a well renowned drama group from Tripura in January'2020	–
14.	Debarpit Chakraborty	B.Sc	Participated and performed a small skit in ICARIA 2K20 organized by ICFAI University Tripura in February'2020	–
15.	Debarpit Chakraborty	B.Sc	Hosted ICARIA 2K20 organized by ICFAI University Tripura in February'2020. He was also a member of the cultural committee of ICARIA-2K20	–
16.	Debarpit Chakraborty	B.Sc	Performed as a guest musician in the AGAMANI 2k19 organized by the ATSF in September'2019.	–
17.	Mamun Acharjee	B.Sc	Participated in Inter college Quiz competition organized by Department of Mathematics at the ICFAI University Tripura in February'2020	–
18.	Souravi Acharjee	B.Sc	Participated in Inter college Quiz competition organized by Department of Mathematics at the ICFAI University Tripura in February'2020	–
19.	Aditi Malakar	B.Sc	Sang a song in ICARIA 2K20 organized by ICFAI University Tripura in February'2020	–
20.	Sajal Mog	B.Sc	Participated in Casual Kokborok Dance and Lebang Traditional Dance in ICARIA-2K20 organized by ICFAI University Tripura in February'2020	–
21.	Pir Khwtar Jamatia	B.Sc	Participated in Casual Kokborok Dance and Lebang Traditional Dance in ICARIA-2K20 organized by ICFAI University Tripura in February'2020	–
22.	Akash Dhar	B.Sc	Participated in Pottery Competition, Extempore, Collage Making and Spell Bee in ICARIA-2K20 organized by ICFAI University Tripura in February'2020	–
23.	Manidwipa Shil	B.Sc	Participated in Poem Writing Competition and Recitation and Rangoli Making in ICARIA-2K20 organized by ICFAI University Tripura in February'2020	Secured 3rd position for her excellent effort in Poem Writing Competition and Recitation
24.	Abhishek Choudhury	B.Sc	Hosted National Science Day organized by ICFAI University Tripura in February'2020.	–
25.	Sushil Gowala	B.Sc	Poster presented in National Science -2020 conducted by ICFAI University	Secured 1 st position for his excellent effort
26.	Mridul Sarkar	B.Sc	Poster presented in National Science -2020 conducted by ICFAI University	Secured 1 st position for his excellent effort
27.	Jewel Chakraborty	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–
28.	Jowel Aktar	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–
29.	Arijit Sinha	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–

30.	Ruchi Roy	M.Sc	Attended Online Lecture jointly organised by the Indian Association of Physics Teachers, Regional Council (Delhi & Haryana) and Delhi State Science Teachers' Forum in June and July'2020	–
31.	Ruchi Roy	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–
32.	Mayuri Saha	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–
33.	Mayuri Saha	M.Sc	Participated in an online art contest of any form organized by the “Crearts India-Art contest III” in June-July'2020	–
34.	Subhrajit Saha	M.Sc	Attended a short term course on “Learn to Design your own Solar Home System” and also participated in a quiz organized by the Energy Swaraj Foundation in June'2020	–
35.	Subhrajit Saha	M.Sc	Attended an Introductory National Workshop on Physical Perspective of Astronomy (IWPPA'2019) organized by IUUCA Pune & ICFAI University Tripura in September'2019	–
36.	Subhrajit Saha	M.Sc	Attended Three Day National Webinar On Physics Enrichment Organized by Indian Association of Physics Teacher in June'2020	–
37.	Subhrajit Saha	M.Sc	Started Youtube channel(PHYSICS LEARNING) in the pandemic to teach physics to class XI students	–
38.	Subhrajit Saha	M.Sc	Works as an Executive Member in an NGO named “GOD’S PLAN NGO”	–

STUDENTS' SPEAK

Students' Speak



Shaheb Choudhury
BSc. Physics (2nd Year)

"Me myself Shaheb Choudhury and I am a student of Faculty of Science and Technology at ICFAI University Tripura. And I am pursuing B.Sc. Physics (Hons.) from this reputed University. I have completed first year in this university. And I have found that all the professors are very supportive towards the students and they are like family to us. They conduct regular classes and organize many topic related presentation which helps us to prepare for the exam. They organize many workshops which help us to gather more information. And if we have any doubts then we can go to the concern professor and they discuss the topic without any hesitation. Every year one of the largest techno cultural fests of North Eastern India that has been organized by

this university that is "ICARIA". It is a of 3 days and 4 nights musical extravaganza accompanied by some brain storming & fierce competitions, has obtained the stature of a carnival, become an aura of joy. In this year I have also participated in some games such as Treasure hunt and poetry. There was a model competition that was held on National Science Day 2020. In that competition me and my group mates has secured 1st place in that completion. And we have made a model of a smart home which consists of automatic fire alarm, automatic water level indicator, automatic door bell."

Shaheb Choudhury,
BSc. Physics (2nd Year)





Shaheb Choudhury and his team mates
with the model and the award.



Manidwipa Shil
BSc. Physics (2nd Year)

"My name is Manidwipa Shil and am pursuing B.Sc Physics honors at ICFAI University Tripura After getting into the university I have found a many opportunities to deal with, the university not only conduct good academic session with qualified II-Tians as faculty members but also as focuses on curricular activities and conducts many programs and competition among the students for their activeness and equality in other field. Being a part of the university, I feel proud."

Manidwipa Shil,
BSc. Physics (2nd Year).



Sanjoy Paul
MSc. Physics (1st Year)

"This is a magnificent academy with excellent teachers, classrooms, warm atmosphere and super friendly and helpful staff. I loved it. Teachers are very professional. When I have a problem, they are always ready to help me. The office workers are perfect, canteen of course as well. Thank you ICFAI University Tripura."

Sanjoy Paul,
MSc. Physics (1st Year).



Deepshikha Chakraborty,
BSc. Physics (1st Year)

"I am Deepshikha Chakraborty from B.Sc. Physics Department 1st year. One of the most interesting stages in life that gives us an opportunity to explore is college life. Life at college is the time when the teenage years end and we all dive deep into the ocean of new beginnings and possibilities. My experience at ICFAI University Tripura was very much exciting. When I got to know that the faculty members are from the highly renowned institutes such as IITs, then I felt very much blessed. Overall, my experience at ICFAI University Tripura was very much good and I hope my upcoming days will be much better."

Deepshikha Chakraborty,
BSc. Physics (1st Year).





Chayanika Sarkar,
MSc. Physics
(Passed out student)

"ICFAI University shaped my life as it provides me with countless opportunities to challenge myself. It's great to say with pride that I completed M.Sc in physics from this university. The faculty members are highly knowledgeable in their field and impart the knowledge to students in a very easy manner. I am really thankful to the university, the faculty members who always helped us during regular college activities. There are many events and competition which gets organised by the University these helps every students to explore more and more. The opportunities I had there, the things I got to do and the time I spent with my friends were the best. I honestly say that it was the best decision I have ever made. It was really one of the best phase of my life."

Chayanika Sarkar,
MSc. Physics
(Passed out student)



Subhrajit Saha
MSc. Physics (2nd Year)

"I am pursuing MSc. Physics at ICFAI University Tripura. Our University Education exposes students to new research & technologies, studying at ICFAI University Tripura encourage creative and Independent thoughts. I have a Youtube channel (PHYSICS LEARNING). I started this channel in the corona pandemic situation (in lockdown) where I teach students about class XI physics."

Subhrajit Saha,
MSc. Physics (2nd Year).

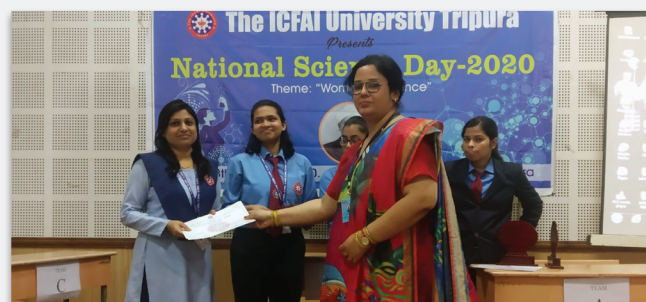


WINTER INTERSHIP PROGRAMME



Goutam Debnath
B.Sc. Physics (3rd Year)

Goutam Debnath, presently a student of B.Sc Physics, 3rd year got an excellent opportunity to carry out his winter internship project during January'2020 while he was still in his B.Sc Physics, 2nd year at Tata Institute of Fundamental Research, Mumbai. He got an exposure to work in one of the best state of the art experimental facilities of our country. He feels to be very privileged to have with some of the brilliant minds of our nation during his internship.



Art By
Argha Swarup Paul (M.Sc 1st Yr)

