Report of the seminars/training : 6

1. Seminar "Flexible and PrintedElectronics for Strategic and Societal Applications"

Programme Schedule Yrayer Ms. Sandra Y.S. Welcome Address Dr. Baiju. Y. Casistant Professor) Inaugural Address Inaugural Address Dr. K.C Preetha (Principal) Invited Talk Dr. Achu Chandran Scientist, CSIR-NIIST, TVM Felicitation Sri. Aji. SRM (Cacordinator, TRENDZ Seminar) Dr. Anisha N (Co-ordinator, TRENDZ Seminar) Yote of Thanks Ms. Sreekutty, S (IMSc Physics) 12:15 PM Paper Presentation by Students 1. Parvathy Vijayan, IMSc Physics Career Opportunity after BSc & MSc Physics Sabie S, IMSc Physics Sabie S, IMSc Physics Anostructured materials; Retrospectives and parspectives Anadana S R, III BSc Physics Contribution of Indian Scientists in the field of physics	Time : 11 AM Venue : Seminar Hall	AREE NARACHE SIVAGIRI, V CAFFILIATED TO UNIVE NAAC RE-ACCREDITER UNICAD COMMEMORATION Death Anniversary Founder Manage	YARKALA RSITY OF KERALA) WITH B++ GRADE EMINAR 022-23 MGE : REACHING THE HED Ing the 50th of Our Beloved r Sri. R. Sankar Final State
TRENDZ SEMINAR SERIES 2022-23	Organizing CommitteeManager, SN CollegesManager, SN CollegesChairperson Er, K. C. Preetha (Manager, SN Colleges)Chairperson Er, K. C. Preetha (Principal)ManagementRepresentative Er, Sri Aji SRM (Executive Member, SN Trusto)Head of the Bopartment Er Dr. Sajesh SasidharanCo-ordinator Er, Dr. Raji RJoint Co-ordinators Er, Bajigu M Mrs. Veenas C. I. Mrs. Aiswarya Mol N. S. Ms. Amirtha. G. S		SREE NARAYANA COLLEGE VARKALA

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As part of Trendz Seminar Series, Post Graduate Department of Physics and IQAC of Sree Narayana College, Sivagiri, Varkala organized an Invited Talk supported by Department of Bio- Technology (DBT) Govt.of India on 15.11.2022 at 11.00 AM in the Seminar Hall. Inauguration of the programme started with "Lighting the lamp" which was followed by a prayer song.





Inauguration of Trendz Seminar 2022-2023

After the prayer Dr. Baiju V, (Assistant Professor, Department of Physics) welcomed everyone to the inaugural session. The presidential and inaugural address was delivered by Dr. K C Preetha, Principal. Dr. Leji J (HOD &Assistant Professor, Department of Zoology), Dr. Preetha Krishnan L, (IQAC Co-ordinator) offered felicitations to the function. Dr. Raji R, (Assistant Professor & Co-ordinator) proposed vote of thanks for the session. Teachers from other departments, and UG & PG students of our departments participated in the function. After the inaugural ceremony, technical session was started.



Technical session by Dr. Achu Chandran

Technical session I was handled by Dr. Achu Chandran (Scientist, CSIR-NIIST, Trivandrum) and he made a talk on the topic "Flexible and Printed Electronics for Strategic and Societal Applications". He started the talk by giving a brief introduction to the topic "what is flexible electronics?" and also his talk touched various areas related to flexible and printed electronics ; present status, current and future challenges, and what advances in science and technology are required to meet the challenges of flexible and printed electronics to become ready for the market. He also showed his latest research activities in this field and motivated

the students. It was indeed a great presentation and it has certainly sparked some true debates on the topic. Smt. Sreekutty S, I MSc PhysicsStudent proposed vote of thanks.





Technical session II comprised of student presentations. The first presentation was made by Miss. Parvathy. Vijayan, I MSc Physics student on the topic "Nobel Prize in Physics 2022: Entangled states – from theory to technology". She conveyed the idea of quantum entanglement and EPR paradox in detail.



Presentation by Miss. Parvathy Vijayan

Sabin B S, I MSc Physics made a talk on "Career Opportunity after BSc & MSc Physics". BSc Physics programme provides a strong base for students in fundamental knowledge in physics-centric courses. B.Sc. Physics programme includes theories and concepts of physicsbased subjects and also open-elective interdisciplinary subjects such as learning computer science and mathematics. After completing B.Sc. in Physics, various opportunities are available for the candidates. Either, they can opt for higher education, MSc Physics or they can go for a job in the relevant field. After B.Sc. degree, students are eligible for the MRNAT / IIT-JAM exam conducted by various institutions. Another exams like Graduate Aptitude Test in Engineering (GATE) is also conducted by universities for admission in M.Tech programme. EST exam is another entrance examination conducted by Science and Engineering Research Board (SERB) for admission in integrated MTech, Ph.D. courses in the institutes that demand JEST scores.

Students having B.Sc. degree can enter M.Sc. programme based on JEST score. TIFR enrols students in its master course in integrated course M.Sc./Ph.D. by conducting a national level test. There are a number of job opportunities available for a B.Sc. Physics graduate. Job opportunities as a scientist exist with organizations like BARC, ISRO, DRDO, VSSC, SSPL and other many well-established research centres in India as well as abroad.



Presentation by Mr. Sabin B S

The third presentation was made by Miss. Abhima S R, III BSc Physics on the topic "Nanostructured materials; Retrospectives and perspectives". She gave a deep insight into the development of nanotechnology and its importance in everyday life. Her talk covered different aspects of nanotechnology, which includes different types of nanomaterials, properties of nanomaterials, different methods adopted for the preparation f nanomaterials and its applications.



Presentation by Miss. Abhima S R

The fourth presentation was made by Miss. Nandana S S, II BSc Physics, on the topic "Contribution of Indian Scientists in the field of physics". She began the class by introducing the renowned Scientist C. V.Raman and his contributions to science. Also, the talk gave special emphasis on the discovery of Raman effects and its applications in different fields. Her talk touched the contributions of almost all Indian Physicist such as S N Bose, A P J Abdul Kalam, Vikram Sarabhai etc



Presentation by Miss. Nandana S S



Certificate distribution by Dr. Biju C

2. "A Hands-on training on LED Fabrication"



A hands on training on LED Fabrication was organized by P G Department of Physics in association with Department of Optoelectronics, University of Kerala, Kariavattom supported by Department of Bio-Technology (DBT), Govt. of India. The programme started with a prayer. Dr. Raji R, (Assistant Professor & Co-ordinator) welcomed everyone to the programme. Dr. Sajesh Sasidharan (HOD& Assistant Professor) gave presidential and inaugural address. Mrs. Veenas C L and Mrs. Aiswarya Mol N. S (Assistant Professor) offered felicitation to the function. Mr. Jyothish B (Assistant Professor) made vote of thanks. After the inaugural ceremony, workshop was started. Mr. Ribbin R, Technical Assistant, and two research Scholars Mr.Ajith A , Mr.Vijesh V from Department of Optoelectronics handled the session. Mr. Ribbin explained the technical aspects such as different parts of LED, punching machine etc. Students were divided into different groups and given directions to assemble LED. The research scholars Ajith A and Vijesh V helped the student to assemble parts and to fabricate LED.



Inauguration of workshop by Dr. Sajesh Sasidharan





Assembling of LED explained by Mr. Ribbin R

Glimpse of LED Fabrication Workshop











3. National Seminar on Recent Trends in Energy and Environment-2022 (NSREE-2K22)

About our College

Sree Narayana College, Sivagiri, Varkala was founded in 1964 in memory of the great social reformer Sree Narayana Guru, who believed in "Liberation Through Education and Strength through Organisation". The college, managed by the S.N Trusts, Kollam, is re-accredited by NAAC with B++ grade in 2021. It is one of the leading institutions in the state. The Post Graduate Department of Physics has been offering BSC Physics since 1967 and MSC Physics since 1995. Many eminent Professors and teachers have been part of this department.

About the Seminar

Post Graduate Department of Physics, Sree Narayana College, Sivagiri, Varkala is organizing a two- day National Seminar on Recent Trends in Energy and Environment-2022 (NSREE-2K22) in association with KSCSTE on 8th & 9th December 2022. The theme of the conference is "Energy and environment security through science and technology ". The two days national seminar will take review of the existing strategies and address the development of new and emerging materials, technologies and applications in energy and environment industries. Furthermore, it is expected that the NSREE-2K22 will provide an exclusive opportunity for intellectually stimulating and engaging interactions amongst the leading scientists, academicians and engineers. Such interactions will facilitate better understanding about technological developments all across the globe amongst the peers. This seminar will certainly ignite the minds of researchers for understanding more interdisciplinary collaborative research for upgradation of technology.

National Advisory Committee

- Prof. Kuruvilla Joseph, Registrar, Professor& Dean, (IIST), TVM
- Dr. S. Narayana Kalkura, Professor, Anna University, Chennai
- Dr. Santhosh P N, Professor, Dept. of Physics, IIT, Madras
- Dr. K. G Gopchandran, Professor, Dept. of Optoelectronics, University of Kerala,
- Dr. V Biju, Professor& Head, Dept. of
- Physics, University of Kerala
- Dr. Radhakrishnan S R, Principal Scientist, CSIR-NPL, New Delhi
- Dr. Subodh G, Assistant Professor, Dept. of Physics, University of Kerala

Organizing Committee

- Sri Vellapally Natesan, Manager (Patron)
- Dr. K. C Preetha, Principal (Chairperson)
- Sri. Aji S R M, S N Trust Executive member
- Dr. Sajesh Sasidharan, HOD (Convenor)
- Dr. Baiju V , Assistant Professor
- Smt. Veenas C L , Assistant Professor
- Shri. Jyothish B, Assistant Professor
- Smt. Aiswarya Mol N S , Assistant Professor
 Dr. Raji R, Assistant Professor (Co-Convenor)
- Miss. Amritha G S, Guest Faculty
- Miss. Reshma G S, Guest Faculty
- Vasundhara A T (II MSc Physics)
- Sabin B S (I MSc Physics)

Sree Narayana College Sivagiri, Varkala Affiliated to University of Kerala NAAC Re-accredited with B++ grade

National Seminar on Recent Trends in Energy and Environment-2022 (NSREE-2K22)

8-9 DECEMBER 2022



Jointly organized by

P G Department of Physics (DBT Star Scheme) & Kerala State Council for Science Technology and Environment (KSCSTE)



The National Seminar on Recent Trends in Energy and Environment-2022 (NSREE-2K22) was jointly organized by the Post Graduate Department of Physics and IQAC, Sree Narayana College, Sivagiri, Varkala in association with Kerala State Council for Science Technology and Environment (KSCSTE) supported by Department of Bio-Technology(DBT), Govt. Of India on 8th & 9th December 2022. The theme of the conference is "Energy and environment security through science and technology ". The two days national seminar will take review of the existing strategies and address the development of new and emerging materials, technologies and applications in energy and environment industries. Furthermore, it expected that the NSREE-2K22 will provide an exclusive opportunity for intellectually stimulating and engaging interactions amongst the leading scientists, academicians and engineers. Such interactions will facilitate better understanding about technological developments all across the globe amongst the peers. This seminar will certainly ignite the minds of researchers for understanding more interdisciplinary collaborative research for upgradation of technology.

The session started with a prayer. Dr. Sajesh Sasidharan (Assistant Professor

and HoD, Department of Physics), welcomed everyone to the seminar session. The inaugural address was delivered by Dr. K. C. Preetha, Principal. Dr. Sibi K S (Assistant Professor, University of Kerala, Kariavattom) offered the keynote address. Sri. Aji S.R.M (Sree Narayana TrustExecutive Member), Dr. Leji J (DBT STAR Coordinator & HOD of Zoology), Dr. Preetha Krishnan L. (IQAC Coordinator) and Mr. G. Sivakumar (PTA Vice President) offered felicitations to the function. The teachers, Research Scholars and the students from various colleges and research institutions participated in the seminar. Dr. Raji R (Assistant Professor, Department of Physics) proposed vote of thanks for the inaugural session.





Inaugural ceremony of the seminar NSREE-2K22





Technical session I

Technical session I was handled by Dr. Sibi K S (Assistant Professor, University of Kerala, Kariavattom) and he made a talk on the topic "Fuel cells". He gave a vast idea about importance of fuel cells in the field of energy. He also point out the importance of solid oxide fuel cells (SOFC) and his latest research activities in this field. The session was very informative as the itinerary was very exciting. The presenter expressed his views on the subject and gave an insight into the matter. It was indeed a great presentation and it has certainly sparked some true debates on the topic. Mrs. Veenas C. L proposed vote of thanks.





Technical session I handled by Dr. Sibi. K.S

Technical session II

Dr. Anoop K K (Assistant Professor, Department of Physics CUSAT) handled the technical session II on the topic "Laser Spectroscopy for Space Exploration". The talk gave an overview on the topic laser diode arrays (LDA) and High-power laser diode arrays (LOA) for successful space borne lidar system for Earth observing and planetary exploration. He pointed out the Remote Sensing Applications of laser systems for space exploration. It was indeed a great presentation and it has certainly sparked some true debates on the topic. Dr. Baiju V, Assistant Professor, proposed vote of thanks.



Technical session II handled by Dr. Anoop K K

Technical session III

This session was handled by Dr. S. Narayana Kalkura (Professor- UGC-BSR FACULTY FELLOW Crystal Growth Centre Anna University) and made an invited talk on the topic "Emerging Trends in the Nature Inspired Materials Technology". In this talk , he gave an insight in to the bio inspired technology through the

combination of medicine, science, and biomedical engineering used to treat diseases, physical disabilities, and wounds. Also, gave an overview of the recent trends in biomimetic research along with current research topics in biomimetics and advances in the preparation of bioceramic composites for biomedical applications. The session was very informative as the itinerary was very exciting. The presenter expressed his views on the subject and gave an insight into the matter. It was indeed a great presentation and it has certainly sparked some true debates on the topic. Dr. Babitha G. S , (Assistant Professor, Department of Zoology) proposed vote of thanks.







Technical session I handled by Dr. S Narayana Kalkura

Technical session IV

In this session, Dr.Rakhi R.B. (Principal Scientist, Material Science & Technology Division CSIR-NIIST, TVPM) made an invited talk an invited talk on "The wonderous world of carbon nanotubes". She gave a deep insight into the history, types, structure and different synthesis methods for carbon nanotubes (CNTs) including arc discharge, laser ablation & chemical vapor deposition. Also gave special emphasis on the remarkable electronic and mechanical properties of CNT and their unique and exciting and tremendous opportunities for the development of fundamentally new material systems. The talk included the different areas of

applications of CNT. Her talk also included the latest research activities in the field of CNT in her research laboratory especially in the field of supercapacitors. The presenter expressed her views on the subject and gave an insight into the matter. It was indeed a great presentation and it has certainly sparked some true debates on the topic. Dr. Biju C (Assistant Professor, Department of Botany) proposed vote of thanks.







Technical session I handled by Dr. Rakhi R B

Valedictory Session

Dr. Sajesh Sasidharan (Assistant Professor and HOD, Department of Physics), welcomed everyone to the valedictory session. He expressed sincere appreciation and gratitude to all theinvited guests, presenters, discussants and the participants for their very active and frank participation. Dr. K C Preetha, Principal, gave her feedback about the seminar. The best presentation award was given to Shri. Visakh V Mohan, Research Scholar, CSIR-NIIST, TVMand Best poster presentation award was given to Smt. Shilp. R, Research Scholar, CSIR-NIIST, TVM. The certificates of Paper and Poster presentation were also distributed. The feedback from the research Scholars and students were also collected. The teachers, Research Scholars and the students from various colleges and research institutions participated in the seminar. Dr.Raji R (Assistant Professor, Department of Physics) proposed vote of thanks for this session.



Glimps of Oral and Poster Presentations











4. Industrial Visit at Kudankulam Nuclear Power Plant on 11/1/2023

The PG department of physics is arranged an industrial visit at Kudankulam Nuclear Power Plant at Tamil Nadu for the final year degree students on 11/1//2023. During the viist Dr A V Satheesh Kumar gave an overview about the working and production of nuclear energy and the students visited the whole area of the nuclear power plant. The students also got opportunity to see the working model of the nuclear power plant.









5. Report on Night sky observation camp "Beyond the Skies: Chasing wonders"



SREE NARAYANA COLLEGE

Sivagiri, Varkala (Affiliated to University of Kerala) NAAC Re-Accredited with B++ Grade

SCIENCE CLUB

in association with P G DEPARTMENT OF PHYSICS & IQAC (DBT STAR SUPPORTED)

Organizes

Inauguration of Science Club 2023 &

Beyond the skies: Chasing wonders (Night Sky Observation)







Dr. K C Preetha Principal Dr. Sajesh Sasidharan HOD, Department of Physics Dr. Raji R Co-ordinator



The inaugural ceremony of the Science Club and night sky observation camp "Beyond the Skies: Chasing wonders" was conducted on 23.01.2023 at 4.30 PM in association with Amateur Astronomers Organization supported by Department of Bio-Technology (DBT), Govt. of India. After the prayer Dr.Raji R, Science Club Co-ordinator welcomed everyone to the inaugural session. The presidential and inaugural address was delivered by Dr. K C Preetha, Principal. Dr. Sajesh Sasidharan, HOD & Assistant Professor, Department of Physics, Dr. Leji J, HOD & Assistant Professor, Department of Zoology offered felicitations to the function. Miss. Gayathri A, II BSc Physics student made vote of thanks. Teachers from other departments, Science club members and students of the other departments (UG & PG) participated in the function. After the inaugural ceremony, technical session was started.



In the technical session, the resource person, Mr. Chandrasekharan R gavea detailed class on basics of astronomy. He gave a detailed description of planets, comets, different constellations, galaxy and star formation. The talk mainly focuses on constellations and different methods of identifying constellations and planets. Later, he gave a brief idea of astrophotography and different tools used in photography. He introduced two mobile apps used for observing night sky "Sky watch" and "Stellarium" to students. The session was very informative.

The Night sky observation camp begins at 7.30 PM and was opened for public.





CPS Map Camera Varkala, Kerala, India PPVM+WGH, Varkala, Kerala 695145, India Lat 8.745373° Long 76.733695° 23/01/23 05:14 PM GMT +05:30

















6. Science Exhibition on 24/02/2023



As part of the National Science Day celebrations 2023, the PG Department of Physics organizes a science Exhibition at physics department on 24 february 2023 from 9.30 am to 12.30 pm. The programme was inaugurated by Dr K C Preetha, Principal, S N College, Varkala. The function was blessed with the presence of Sri Aji S RM, S N Trust Executive Member. The various departments Botany, Mathematics, Chemistry, Geology and Zoology were also associated with this exhibition. The graduate and post graduate students of PG department of physics were actively participated in the successful conduction of the exhibition. They prepared various science projects, models and gives awareness class for the students who attend the exhibition about the various experiments which they do in their lab as part of their curriculum. The students from various schools located near to our college are actively participated in viewing the exhibition. The students and teachers from other departments are also visited the exhibition.













7. Observance of World Environment Day, 2023

Department of Physics observed "World Environment Day" on 05.06.2023. Students from the department's UG and PG programmes actively took part in the festivities. Planting of tree saplings and a poster presentation on environmental conservation were the programmes planned for this year.



SREE NARAYANA COLLEGE SIVAGIRI, VARKALA (Affiliated to University of Kerala NAAC, Re-accredited with 'B++' Grade)

PG DEPARTMENT OF PHYSICS (DBT STAR SCHEME SUPPORTED)

observes

Vorld Environment Day 2023" (Theme:Solutions to Plastic Pollution)

> on 05.06.2023

Programmes

- Planting of Tree Saplings
 - **Poster Presentation**

Students of the II BSc Physics created a variety of posters to help fellow students become more conscious of the need to safeguard the environment. The themes of posters were as follows: Plastic Pollution, Environment Conservation, Environment Protection, Marine Pollution, Waste Disposal & Management, Air pollution, Man Animal conflict.



Sandra V S- Plastic Pollution, Archa S-Air Pollution



Ananthakrishnan S-Waste Disposal & Management, Lekshmi J B - Man Animal conflict



Parvathy A B-Environment Protection, Soorya G S- Environment Conservation



Unnimaya Joy- Marine Pollution



Poster Presentation Team (II BSc Physics)-Akhil V, Malavika S, Adithyan K, Sandra V S, Unnimaya, Gayathri, Nandana S S, Lekshmi J B, Soorya G S

The programme "Planting of Tree Saplings" came up next. The programme was inaugurated by Dr. Sajesh Sasidharan (HOD, Department of Physics), who also planted a tree sapling in the premises of the Dept. of Physics. The importance of World Environment Day and the necessity to protect the environment were then discussed in his address to the students. Faculty members and UG and PG students from the department planted tree saplings after the inauguration.



Dr.Sajesh Sasisdharan (HOD,Dept. of Physics) planting a tree sapling in the premises of Dept. of Physics on 05.06.2023 as part of "World Environment Day 2023"



Dr.Sajesh Sasisdharan (HOD,Dept. of Physics) addressing the students of Dept. of Physics on "World Environment Day June 2023"



Sri.Jyothish.B.(Asst.Prof.,Dept.of Physics) & Students of the Dept. of Physics,Planting Saplings

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