

## **HANDS-ON TRAINING AND WORKSHOPS**

As an integral part of teaching strategy, we incorporate progressive teaching methods like hands-on training and workshops for the effective transfer of knowledge. This aims at nourishing the experiential learning skills of students. Thus increasing their quest for knowledge with active involvement in the respective subjects.

The following are the hands-on training and workshops conducted by the departments.

### **Department Of Zoology**

#### **HANDS-ON TRAINING ON MICROSCOPE**

On 07<sup>th</sup> and 8<sup>th</sup> January 2017 the Zoology Laboratory became a platform for gaining lab experience for school students. This programme was conducted in association with the Kerala Sasthra Sahithya Parishadh which is a progressive outfit in the state of Kerala, India. It was conceived as a people's science movement. The main mission of this initiative is the challenge of arming people with the tools of science and technology so that they can reverse the process of monopolizing the benefits of science and technology by a privileged minority.

Around thirty students and teachers of nearby schools visited the Departmental laboratory to learn how to use a microscope. Ms. Jolly Thomas, the head of the department led the workshop on “how to use microscopes” for higher secondary and high school students. About 11 students of the Department of Zoology volunteered to help conduct the event.

Though the event was conducted on Saturday and Sunday, the students of our department enthusiastically helped organize the program and also helped the school students when they were in doubt or when they encountered any problems. The students were able to transfer their knowledge to the school students.

7/1/2017 – 8/1/2017 Hands-on training – School students being shown how to use microscopes



7/1/2017 – 8/1/2017 Hands-on training – School students visiting the Zoology museum



## **DAIRY PRODUCTS TRAINING – EXHIBITION CUM SALE OF DAIRY PRODUCTS**

The students of III DC had undergone training in making dairy products at the Dairy Training Institute, Alathur. The skills learnt there were put to use and many dairy products were made by the students for exhibition cum sale.

The students divided themselves into teams and planned the items to be made and the materials required for the preparation of the products. The event was fruitful after many weeks of planning. Some of the items made by the students – milk pedas, yoghurt, cakes, shakes, rasmalai, rasgulla, gulab jamun etc. All the items that were sold were entirely made by the students from scratch. The III DC students were helped by the II DC and I DC students. As students of Zoology and aware of the adverse effects of plastics the students sold their products in eco-friendly packaging. Earthen pots were used to sell yoghurt, paneer, peda etc., shakes were sold in reusable glasses. Cakes were sold in paper plates or card board boxes.

The II DC and I DC students also conducted an exhibition of charts, models and games related to dairy and animal husbandry. Information regarding cattle breeds, the composition of milk, milk adulteration etc. There was also a spinning wheel of questions where the visitors were asked various questions and winners were given free treats from the products on sale.

The students of other departments and teachers of the college were the buyers and all were very happy with the products sold by the students and very enthusiastic about knowing how all were made. The event was considered to be a success as all the items prepared were sold and all customers were happy.

Though we had hands-on training at DTC, this was the first time we prepared the products on our own. Though there were several mishaps it was an excellent learning experience for us as students. This also helped me learn the way to manage money as we had to balance out our expenses and profits.

### Invitation - Brochure

"THE BEST THINGS  
IN LIFE ARE SWEET"

**EXHIBITION**

VENUE -  
II DC, III DC AND  
B.SC. ZOOLOGY  
LABORATORY  
OF ZOOLOGY DEPARTMENT

**HUGE  
SALE**

**VACADA  
FEST**

5TH MARCH 2019  
TUESDAY

DEPARTMENT OF ZOOLOGY,  
SACRED HEART COLLEGE  
CHALAKUDY

FREE ENTRY

The brochure features a central image of various dairy products including a bottle of milk, a pitcher, cheese, and yogurt. It also includes a photo of cheese cubes on a plate and a logo of a dove in a circle. The background is a warm brown color with decorative elements like a cheese slice icon.



**5/3/2019 – Inauguration of Vacada Fest by Ms. Usha Devi, Vice Principal, DTC, Alathur**



**5/3/2019 – Sale of dairy products made by the students at Vacada Fest**



**5/3/2019 – Sale of dairy products made by the students at Vacada Fest**



**5/3/2019 – Exhibition of information related to dairy and dairy science**



## **HANDS-ON TRAINING ON DNA ISOLATION AND BARCODING**

One of the current areas of research in the field of biology is DNA studies. For any study using DNA, the first step is its isolation, separation and barcoding. Hence it was decided to conduct Hands-on training on DNA isolation and Barcoding for the students in association with Mr. Tojo Tharayil, Director, DRP Molecules, Kalamassery and Ms. Soja N.J. Research Assistant, DRP Molecules, Kalamassery 11th – 12th March 2019. Instruments such as PCR, gel reader etc were brought by Mr. .Tojo.

The program was inaugurated by College Principal Dr. Sr. Irene, on 11-03-2019, the resource persons were welcomed by Dr. Sr, Betsy, HOD, Dept. of Botany the hands-on training commenced shortly after a briefing from the resource persons Mr. Jojo Tharayil, and Mr. Soja of DRP molecules, Kinfra park, Kalamassery. Certificates were distributed to students after the training.

Students were divided into 4 groups and each group was able to separate DNA from bacterial cultures. Each group was given a different set of instruments such as micropipette and glassware required. A demonstration of how the DNA separation was shown to each group by Mr. Tojo and Ms. Soja. The students followed the procedure to isolate DNA from the samples given to them. Though a few of them found it a struggle they were able to achieve the desired results after 2-3 trials. Mr. Tojo was patient in handling the inadequacies of the students and they eventually succeeded in the procedure. DNA was subjected to restriction fragmentation and then amplified using the PCR. The sample was then run through an electrophoretic apparatus and separated. The separated sample was then viewed using fluorescence light.

11/03/2019 to 12/3/2019 – hands-on training DNA isolation and barcoding – Mr. Tojo explains how to use PCR



11/03/2019 to 12/3/2019 – hands-on training DNA isolation and barcoding – group photo





## **BIRD SURVEY**

Bird Watching and Survey of the birds of the Thomana wetlands, Irinjalakuda by Department of Zoology, Chalakudy was organized on 7th January 2020 in association with “Birders sans Borders” an organization of bird watchers and Forest Department Thrissur. Birders sans Borders is an organization of amateur bird watchers who actively participate in bird surveys and help create a database of the bird population in Kerala. The students identified the birds and took a survey of their numbers.

The department arranged a wetland bird survey in association with birders sans borders. As a pilot programme for this, there was a seminar on wetland birds on 10th December 2019. The resource person was Mr.Raphi Kallettumkara, bird watcher, Birders sans borders. He gave a detailed description of the types of birds that can be seen. He also gave a description of how to identify each bird by looking at its beak shape and size, colour and distinguishing features. He showed the students how to create groups and divided the area to be surveyed into transects. He also showed us how to use a binocular and take notes for it.

The birds that were identified from Thommana were sorted according to their conservation status according to the IUCN List.

There were a total of 24 species of birds that were identified from the Thomanna wetlands. Out of these the river tern, black-headed Ibis and painted stork were of the near threatened status. A detailed report of the bird survey was submitted to the Birds san Borders association.

10/12/2019 – Pilot program – to learn how to identify wetland birds



10/12/2019 – Pilot program – dividing students into groups for later field study



7/1/2020 - Bird survey to Thommana wetlands

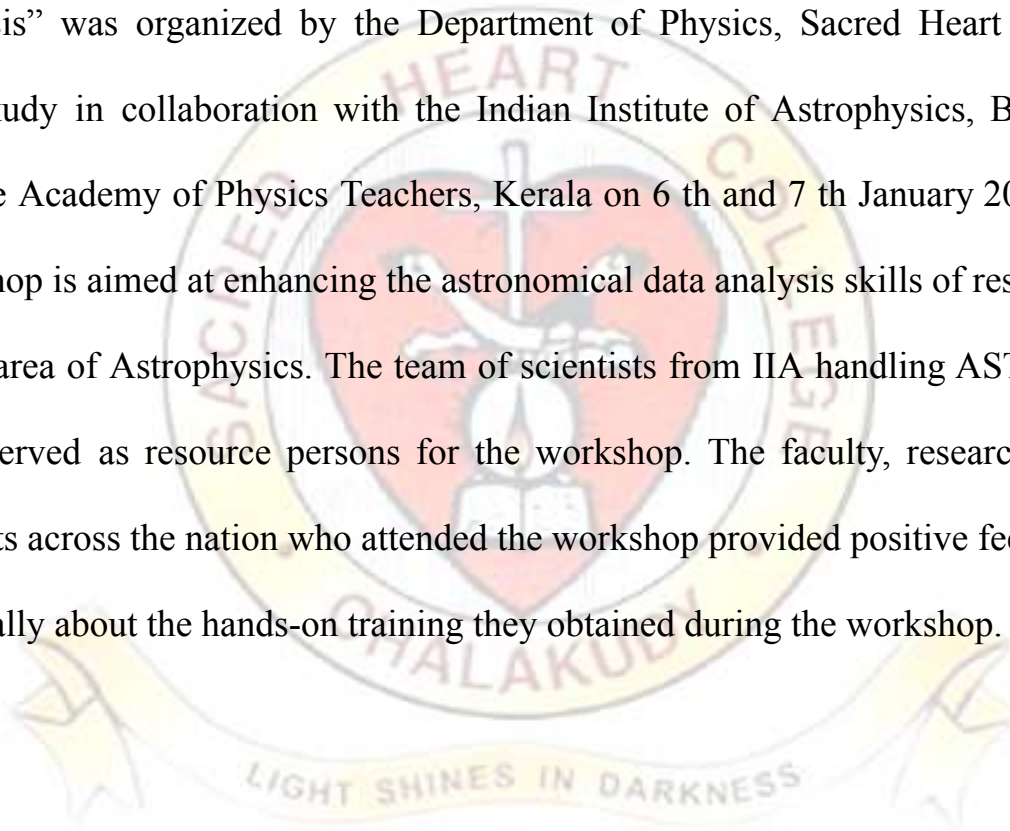


7/1/2020 - Bird survey to Thommana wetlands



**Department of Physics**  
**National Workshop on “Optical and UV Astronomical**  
**Data Analysis”**

A National Collaborative Workshop on “Optical and UV Astronomical Data Analysis” was organized by the Department of Physics, Sacred Heart College, Chalakudy in collaboration with the Indian Institute of Astrophysics, Bangalore and the Academy of Physics Teachers, Kerala on 6<sup>th</sup> and 7<sup>th</sup> January 2018. This workshop is aimed at enhancing the astronomical data analysis skills of researchers in the area of Astrophysics. The team of scientists from IIA handling ASTROSAT Data served as resource persons for the workshop. The faculty, researchers and students across the nation who attended the workshop provided positive feedback, especially about the hands-on training they obtained during the workshop.





APT COMPUTATIONAL PHYSICS SERIES  
Series I : Astronomical Data Analysis

**National Workshop 4 : OPTICAL AND UV ASTRONOMICAL DATA ANALYSIS**  
In Collaboration with IIA, Bangalore

Topic : **OPTICAL AND UV ASTRONOMICAL DATA ANALYSIS**  
Dates : 6 - 7 January 2018  
Venue : Sacred Heart College, Chalakudy

Resource persons : 1. Dr. P. Sreekumar, Director, Indian Institute of Astrophysics, Bangalore  
2. Dr. Annapurni Subramaniam, Professor, IIA  
3. Dr. C. S. Stalin, Associate Professor, IIA  
4. Dr. Koshy George, Post-Doctoral Fellow, IIA  
5. Rekshesh Mohan, Scientist D, IIA

The workshop is a joint venture of APT, Kerala, IIA, Bangalore and Sacred Heart College, Chalakudy. In this workshop, we will start with the basic techniques of astronomical data analysis in the optical and ultraviolet band and discuss how the data can be extracted and analyzed. The resource persons belong to the team of scientists in charge of the UV telescopes in the Indian satellite ASTROSAT and the original data from ASTROSAT will be used for hands-on sessions. The workshop aims to provide teachers and students with a range of ideas and activities which will help them initiate minor projects related to optical and UV astronomy. Both students and teachers can apply. No registration fee for students.

Maximum intake : 40

**Last date for registration : 20 December 2017**

**Registration fee** : Non-Resident : Rs.600, Resident : Rs.900.

**How to apply** : Transfer the registration fee by internet banking to the account of Nijo Varghese, SB A/C. No: 67066021541, Bank: SBI, Chalakudy PSB, IFSC: SBIN0071020. After transferring the fee, notify your name, college, amount credited, and transaction ID and date by e-mail to [njiovarghesen@gmail.com](mailto:njiovarghesen@gmail.com).

**Coordinator** : Dr. Nijo Varghese, Dept. of Physics, Sacred Heart College, Chalakudy  
E-mail : [njiovarghesen@gmail.com](mailto:njiovarghesen@gmail.com) | Ph : 9496805788



Optical and UV astronomical Data Analysis on 6th and 7 th january 2018

## **The Erudite Scholar-in-Residence Programme**

Department of Physics, Sacred Heart College, Chalakudy collaborated with The Department of Physics, Mar Thoma College, Tiruvalla, Mar Ivanios College, Thiruvananthapuram, Bishop Moore College Mavelikara, St.Teresa's college Ernakulam to organize the Kerala State Higher education council's Erudite Scholar-in-Residence Programme during 22-27, February, 2021. The event enables university students, Researchers and teachers to interact with scholars of worldwide recognition. The webinar was led by eminent scholars Dr. Raju V Ramanujam, Professor, Materials Science Engineering, Nanyang Technological University, Singapore and Dr. Rahul R Nair, Professor, Material Physics, University of Manchester, UK. Dr. Nijo Varghese was the local organizer from the college's side.

Brochure indicating the nature of collaboration

DEPARTMENT OF PHYSICS,  
MARTHOMA COLLEGE, TIRUVALLA



# ERUDITE SCHOLAR IN RESIDENCE PROGRAMME

22ND TO 27TH FEBRUARY, 2021

SPONSORED BY  
KERALA STATE HIGHER EDUCATION COUNCIL



**Prof. Dr. Raju V Ramanujan**  
Nanyang Technological University, Singapore

## PROGRAMME SCHEDULE

### FEBRUARY 24

**10:00 - WELCOME SPEECH**

Dr. RAJESH SURENDRAN,  
MAR IVANIOS COLLEGE, TIRUVANANTHAPURAM

**10:05 - MODERATOR**

Dr.M.R. ANANTHARAMAN,  
UGC-BSR PROFESSOR, CUSAT

**10:10 - ERUDITE LECTURE 3**

Prof. RAJU V RAMANUJAN  
NANYANG TECHNOLOGICAL UNIVERSITY, SINGAPORE  
*Triggered healing magnet-polymer composites*

**10:55 - INTERACTIVE SESSION & OPEN DISCUSSIONS**

**11:30 - VOTE OF THANKS**

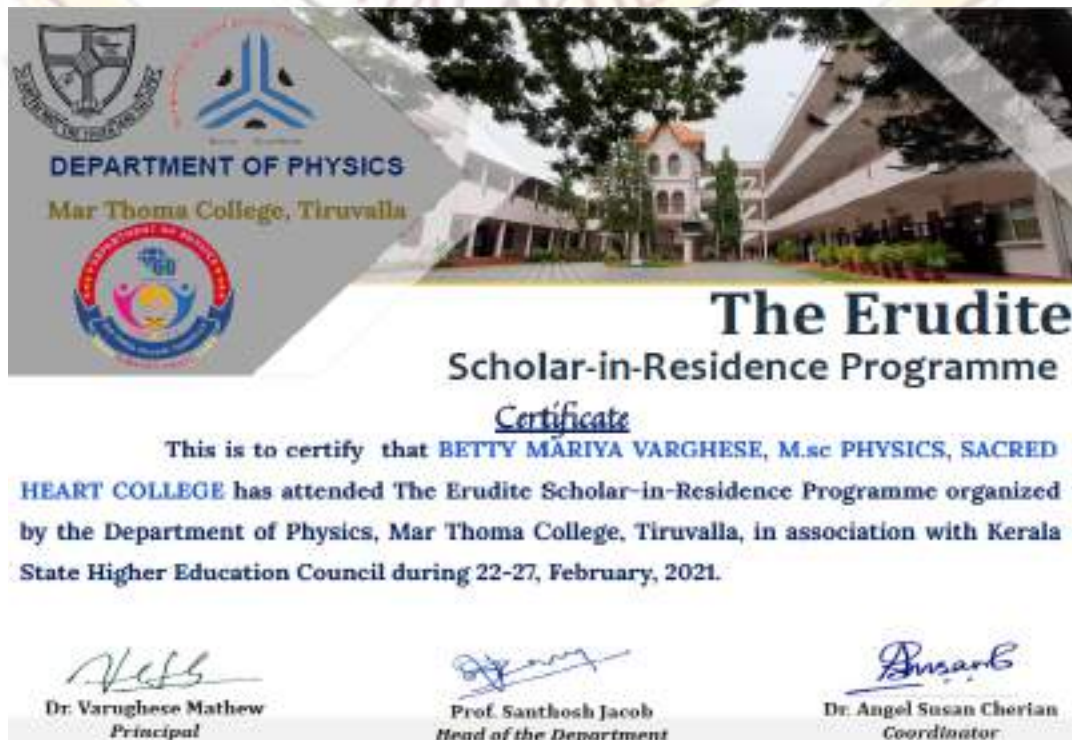
Dr. NIJO VARGHESE  
SACRED HEART COLLEGE, CHALAKUDY



**Arrangement done in the college for attending the program**



**A sample of the certificate issued to the participants  
(All the certificates are with us)**





## **Interdisciplinary Research-oriented Online Faculty Development Program**

The Departments of Physics and Chemistry, Sacred Heart College for Women, Chalakudy, conducted a Two Week Interdisciplinary research-oriented Online Faculty Development Programme on “**Structural Analysis Using Rietveld Refinement, Microscopic and Compositional Analysis**” in collaboration with the six colleges of Kerala (Bishop Moore College, Mavelikkara, St. John’s College, Agra, Catholicate College, Pathanamthitta, St. Joseph’s College for Women, Alappuzha, Assumption College (Autonomous), Changanacherry and St. Joseph’s College (Autonomous), Irinjalakuda) and GAD-TLC of MHRD, under the Govt. of India, in the time schedule of 29 September to 13 October 2021.

Dr. Nijo Varghese from the Department of Physics and Dr. Santhosh Paul from the department of Chemistry were the conveners of the program from the college’s side. Dr. Sr. Reena Ittychan and Ms. Fency K F from the department of Physics and Dr. Laina A L from the department of Chemistry successfully completed the course.

The programme was arranged as different sessions which covered expertise in material science and research. Each session was handled by experts in the particular field. On the inauguration day 29 September 2021, the Chief Patron address was given by Dr. Vimal Rarh, Project Head and joint Director GAD TLC. Also the keynote address of the FDP was given by Prof. A. K. Bakshi, Vice Chancellor, PDM University, Haryana and the Chairman of GAD-TLC of MHRD. He spoke on the topic “Achieving Excellence in Science in India in the 21st century

- Challenges and Opportunities”. He covered topics like Qualities of a good teacher, Gender gap in research and Challenges faced by researchers in the 21st scenario. The session was chaired by Dr. Tintu K Kuruvilla, Assistant Professor of Physics, Bishop Moore College, Mavelikara.

**Brochure indicating the Collaboration between institutions:**

**Two-Week Interdisciplinary Online Faculty Development Program/ Refresher Course / Certificate Program**

**Structural Analysis Using Rietveld Refinement, Microscopic and Compositional Analysis**  
**29 September to 13 October 2021**

**GURU ANGAD DEV TEACHING LEARNING CENTRE**  
**MINISTRY OF EDUCATION GOVT. OF INDIA**  
**PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING (PMMNMTE)**

In collaboration with

**St. John's College Agra**    **Bishop Moore College, Mavelikara**    **Catholic College Pathanamthitta**    **Sacred Heart College, Chalakudy**    **Christ College (Autonomous) Irinjalakuda**

**Topics Covered:**

- Basics of X-ray Diffraction
- Rietveld Refinement
- Scanning Electron Microscopy
- Transmission Electron Microscopy
- X-ray Photoelectron Spectroscopy
- Intellectual Property Rights
- Research Ethics
- The Art & Science of Writing a Publishable Article
- Productive Research

❖ *Equivalent to Face to Face Two Week FDP.*

❖ *Fulfills Requirement as per CAS of UGC and AICTE for Promotional Requirements of Teachers*

❖ *All Science Faculty Members & Research Scholars Can Apply*

❖ *Registration fees: Rs.12600/- (Inclusive of Course Fee, Study Material & Certificate)*

**Beneficiary Details**

A/c Holder Name : Bishop Moore College  
A/c number : 57040426450  
IFSC : SBIN0070089  
Bank : SBI, Mavelikara Town

**To Register Click here**

❖ *Last Date for Registration: 5 pm on 24 September 2021*

**About GAD-TLC of MHRD**

"Guru Angad Dev Teaching Learning Centre" is a centre of MHRD under the Pandit Madan Mohan Malviya National Mission on Teachers and Training (PMMNMTE) of the MHRD, Govt. of India. The objectives of the Teaching Learning Centre are to prepare Modern age teachers. Under this centre many National level activities like Seminars, FDPs and workshops at both basic and advanced level are being conducted to empower the teachers in ICT skills, develop teaching kits / teacher's tools and ICT empowered pedagogies to enhance teaching-learning process. In its various programmes, around 55,000 teachers across the nation have benefitted till now. GAD TLC is also organizing Student Specific Training Courses to upgrade their skills as required for their Professional Development.

**Prof. A.K. Bakhshi**  
Vice-Chancellor, PDM University, Baryasaan  
Chairman, GAD-TLC

**Prof. K.V. Bhanu Murthy**  
Professor, DTU  
Vice-Chairman, GAD-TLC

**Prof. Jaswinder Singh**  
Principal, SOTB Khasi College  
Director, GAD-TLC

**Dr. Vimal Ragh**  
Project Head & Joint Director, GAD-TLC

For queries, please email to [hodphysicsbmc@gmail.com](mailto:hodphysicsbmc@gmail.com)



# The details of the institutions participating in the collaboration



## Two-Week Interdisciplinary Online FDP

### Structural Analysis Using Rietveld Refinement, Microscopic and Compositional Analysis

29 September 2021- 13 October 2021



### About the Collaborating Colleges



**Bishop Moore College, Mavoliyara,** established in 1961 and affiliated to the University of Kerala, has been awarded A grade by NAAC in the 3rd cycle of accreditation and ranked 76 among the Colleges in India in the NIRF ranking 2020. The College offers 11 undergraduate, four postgraduate and two research programmes in Science, Commerce, Arts and Humanities along with two UGC-sponsored add-on courses, and also provides opportunities for students to carry out Summer Research Projects at reputed institutes in the country. The undergraduate programmes in the Science departments are supported under the DBT-STAR College scheme. The College has become an active hub of research with well equipped laboratories, over 100 publications in international journals, a number of completed major and minor research projects, the research facilities being enhanced by utilizing funds under the DST-FIST scheme and KSCSTE SARD project scheme. The research centres have collaborative projects with institutes like the UGC – DAE Consortium for Scientific Research, BARC Mumbai and IITAC, Delhi.



**St. John's College, Agra,** was established in 1850 by the Church Missionary Society of England through the efforts of the Agra C.M.S. Association which came into being in 1840. From 1862 to 1888 the College remained affiliated to Calcutta University and later up to 1927 to Allahabad University. In 1927 with the formation of Agra University, the then Principal of the College Dr. A.W. Davies became its first Vice-Chancellor and the College was affiliated to the Agra University. The college became a First Grade College in 1891 with B.A. and LL. B. classes, and affiliation was granted in 1893 for postgraduate classes. Thus it has the rare distinction of being a postgraduate institution of more than a century's standing. The college has extensive post graduate departments with facilities for research and three undergraduate departments. The college also runs five self-financed recognized courses viz: B.Com(Vocational), B.B.A., B.Ed., D.El.Ed, M.A(Urdu), Post Graduate Diploma in Clinical Psychology and two partially self-financed degree programs in B.Sc with Industrial Chemistry & B.Sc with Computer Science. The foundation stone of the Centenary Wing was laid by Bhanu Prasad Saraswati, former President of India, in 1958 and was opened by Bhanu Prasad Saraswati, the first Prime Minister of India, in 1959, with the words "I have come to pay tribute to this temple of learning." The College has very distinguished alumni, the foremost of them being the late Dr. Shankar Dayal Sharma, the former President of India present situation.



**Catholicate College, Pathanamthitta** founded in 1952 on the serene Basil Hills has a rich legacy of almost seven decades and is affiliated to Mahatma Gandhi University, Kottayam. The motto of this temple of learning is "Fear of the Lord is the beginning of wisdom." It imparts value-based education aimed at the holistic and integrative growth of the individual so as to fulfill the vision of creating an educated and enlightened society for a brave new world. It has been accredited by NAAC with CGPA 3.69, A Grade and is one of the Thirteen special grade colleges in Kerala. The college has eight research departments and offers fifteen PG Programmes, thirteen UG Programmes and one Integrated MA Programme in the aided stream. The college was identified by the department of science and technology, government of India, for FIST funding. The college has been awarded ISO 9001:2008 certification. Current year, the college is celebrating its platinum jubilee. The college has been endeavoring to shape the destiny of a community in the fullest spirit of its stated mission, an educated, enlightened society for a brave new world.



**Sacred Heart College, Chalakudy,** is an institution managed by the Alverno province of Franciscan Clergy congregation, affiliated to the University of Calicut and aided by the Kerala government. The College, established in 1980, as a junior college with Pre-degree courses was upgraded to a first grade status in 1991 and is presently offering eight Under Graduate and six Post Graduate courses. The motto of the college is "LUX IN TENEBRIS LUCET" (Light Shines in Darkness). The College is located in a peaceful semi-urban locality, the lush green gardens and well designed infrastructure provide the perfect ambience for learning, sharing and development of the students. The college was re-accredited by NAAC with A+ grade (CGPA 3.85) in 2013. The Department of Physics has been maintaining a unique position in the College in respect of overall performance, ever since it was established. Physics Department aims at nurturing totally competent physicists with integrity, adaptability, social commitment, ethical values and spiritual elevation that can provide innovative leadership in academia and society.



**Christ College, Irinjalakuda** was started in 1956, by the Devamatha Province of the Carmelites of Mary Immaculate (CMI), an indigenous religious congregation founded in 1833 by Saint Cyrus Elias, a religious priest and versatile genius, who envisioned education as a tool for liberation and development. Founded as per the provisions of the Indian Constitution, part III, Article 30(1) and administered by Christ College Educational Society, (Regd. No. 13775), this college is a Minority institution. College is affiliated to University of Calicut. Christ College is included under the sections 2(f) and 12B of the University Grants Commission (UGC) and was re-accredited by National Assessment and Accreditation Council (NAAC) with A grade (3.21) in the third cycle. Following recommendation from state government, the college has been conferred the "Autonomous status" by University Grants Commission (UGC) during the year 2017, the Diamond Jubilee year of the college. Christ College is part of a century-old tradition of CMI education that is at its heart, Christian and open to all sections of society. It offers an ideal vision of education that is aware of and responsive to the challenges of the nation's present situation.

## Brochure:



### Two-Week Interdisciplinary Online FDP

## Structural Analysis Using Rietveld Refinement, Microscopic and Compositional Analysis

29 September 2021- 13 October 2021



### Resource Persons

|  |   |  |   |
|--|---|--|---|
| <b>Prof. A Sundaresan</b><br>Professor & Chair<br>Chemistry and Physics of Materials Unit,<br>Jawahar Institute for Advanced<br>Scientific Research                      |    |    | <b>Prof. Priya Mahadevan</b><br>S. N. Bose National Centre for Basic Sciences<br>Kolkata  |
| <b>Prof. Dr. Ramesh C Gaur</b><br>Dean & Director (Library & Information)<br>& Head,<br>Kalorathi Division, Indira Gandhi National<br>Centre for Arts (IGNCA), New Delhi |    |    | <b>Prof. K Muralidhar</b><br>Former HoD, Department of Zoology,<br>University of Delhi  |
| <b>Dr. Suresha S. J</b><br>Technology Manager,<br>Micro and Nano Characterization Facility,<br>CeNSE, IISc Bangalore   |    |    | <b>Prof. (Dr.) Himi Gopalakrishnan</b><br>Dean, Faculty of Law<br>Homi Bhabha School of Indian Legal Thought<br>Mahatma Gandhi University, Kottayam |
| <b>Dr. Madhu S. Nair</b><br>Associate Professor<br>Cochin University of Science and Technology<br>Cochin   |   |   | <b>Dr. Lawrence P.</b><br>Asst. Professor of Law<br>Government Law College,<br>Calicut.   |
| <b>Dr. Madhu Chennabasappa</b><br>Assistant Professor<br>Siddaganga Institute of Technology<br>Tumkur, Karnataka, India  |  |  | <b>Dr. Praveen Managatti</b><br>University of Rennes 1,<br>FRANCE   |

### Organizing Committee

|  |
|--|
| <b>Dr. Jacob Chandy</b> , Co-Patron, Principal, Bishop Moore College, Mavelikara                                   |
| <b>Prof. S. P. Singh</b> , Co-Patron, Principal, St. John's College, Agra  |
| <b>Dr. Philipose Omman</b> , Co-Patron, Principal, Catholicate College, Pathanamthitta                             |
| <b>Dr. Sr. Roma Ittyachan</b> , Co-Patron, Principal, Sacred Heart College, Chalakudy                              |
| <b>Fr. Dr. Jolly Andrews CMI</b> , Co-Patron, Principal, Christ College, Irinjalkuda                               |
| <b>Dr. Ranjith Mathew Abraham</b> , Vice Principal & IQAC Co-ordinator, Bishop Moore College, Mavelikara           |
| <b>Dr. Susan Varghese P.</b> , IQAC Co-Ordinator, Head of the Department of Chemistry, St. John's College, Agra    |
| <b>Dr. D. Sajjan</b> , Co-Ordinator, Head of the Department of Physics, Bishop Moore College, Mavelikara           |
| <b>Dr. Sossen Samuel M.</b> , Co-Ordinator, Head of the Department of Physics, Catholicate College, Pathanamthitta |
| <b>Dr. Shaju K.V.</b> , Co-Ordinator, Vice Principal and Head, Department of Physics, Christ College, Irinjalkuda  |
| <b>Dr. Jerin Susan John</b> , Convener, Department of Physics, Bishop Moore College Mavelikara                     |
| <b>Dr. Arun Aravind</b> , Convener, Department of Physics, Bishop Moore College Mavelikara                         |
| <b>Dr. Dhanya I.</b> , Convener, Department of Physics, Catholicate College, Pathanamthitta                        |
| <b>Dr. Nijo Varghese</b> , Convener, Head of the Department of Physics, Sacred Heart College, Chalakudy            |
| <b>Dr. Santhosh Paul</b> , Convener, Head of the Department of Chemistry, Sacred Heart College, Chalakudy          |
| <b>Dr. Suhin K. Jose</b> , Convener, Department of Environment Science, Christ College, Irinjalkuda                |



**Dr. Reena Ittyachan, Principal, SH College, felicitated in the inaugural function**



**Link sessions 1:** Topic: Online FDP Program - GAD TLC-Day 1

Start Time : Sep 29, 2021 14:26

Meeting Recording:

[https://us02web.zoom.us/rec/share/qJBDgHCN-CsCvuaF4VRtGGiiqL3\\_Fwz6xQiU\\_NqqRyTb-o7WdjBK3rcqNn8rrRxID.v2W7S73ERilWMyJz](https://us02web.zoom.us/rec/share/qJBDgHCN-CsCvuaF4VRtGGiiqL3_Fwz6xQiU_NqqRyTb-o7WdjBK3rcqNn8rrRxID.v2W7S73ERilWMyJz)

Access Passcode: @rD12JtB

In the afternoon session Prof. K. Muralidhar, Former HOD, Department of Zoology, University of Delhi and currently working on the Advisory Board of the Inter – University Centre for Teacher Education at Banaras Hindu University and a visiting Professor to Annamalai, Madras and Hyderabad Universities. He spoke on the topic “Ethics in science –

A Perspective”. Prof. K. Muralidhar started the session by explaining the Morals, Laws and Ethics, Professional Ethics, Ethics of Science, Limitations of Science and how to recognize unethical practice were explained and highlighted.

Second day of the FDP programme on 30th September 2021 starts with the interdisciplinary talk of Dr. Law Well Man P, Assistant Professor of Law, Govt. Law College, Kozhikode. He spoke on the topic “Intellectual Property Rights-Significance of Trademarks in startups and Business Enterprises”. Dr. Law Well Man started the session by explaining the various aspects of Intellectual Properties like Patent, industrial designs, copyright, semiconductor chip, plant variety, geographical indications, trade secrets and trademarks in detail with quoting examples from our day to day life. The session was highly informative and the speaker elaborated the idea of Intellectual Property rights by quoting various examples of our daily life. The session was highly interactive and was chaired by Dr. Dhanya I, Assistant Professor of Physics, Catholicate College, Pathanamthitta.

Second session of the day is handled by Prof. Dr. Ramesh C Gaur, Dean and Director (Library & Information) & Head - Kala Nidhi Division of Indira Gandhi National Centre for the Arts (IGNCA), New Delhi. He spoke on the topic “Plagiarism in Research”. The session

was narrated with different types of plagiarism and main ethics that should follow in research. The session was highly informative and was chaired by Dr. Achamma George, Assistant Professor of Physics, Catholicate College, Pathanamthitta. Finally he gave a clear idea regarding citation and referencing. All reference styles are elucidated with free software like Mendeley, Zotero and PDFVIEWERVIEW.

Lecture V & VI of the FDP programme was arranged on 02nd October 2021 and is handled by Dr. A Sundaresan, Professor in Jawaharlal Nehru Centre for Advanced Scientific Research and now he is Chair of Chemistry & Physics of Materials Unit. His lecture mainly focused on the topic “Introduction to Crystallography”. The session began with basic concept of crystallography and had a detailed discussion regarding space groups, crystal structure, Bravais Lattice etc. The sessions were highly informative and got a thorough basic knowledge related to crystal systems and structures for solid state materials. The session was chaired by Dr. Achamma George and Dr. Dhanya I, Assistant Professor (s) of Physics, Catholicate College, Pathanamthitta.

Day 4 of the programme on 4 October 2021 was hosted by Christ College, Irinjalakuda and the resource person was Dr. Madhu Chennabasappa, Assistant Professor, Department of Physics, Siddaganga Institute of Technology, Tumkur, Karnataka. The topic of the day was “Structural Analysis Using Rietveld

Refinement, Microscopic and Compositional Analysis". The first session began at 9.30 am with the theory of how to 'see' atoms using X

rays. The use of X-ray diffraction in studying phase purity, quantification, crystalline / amorphous nature of material, strain, stress & defect detection, crystalline size detection and thickness were mentioned. The second session began at 11.30 am and the resource person is Dr. Praveen Managutti, who is pursuing post-doctoral research in France. The second session gave hands-on training for the participants.

Day 5 of FDP was hosted by Christ College, Irinjalakuda on 5 October 2021. The first session was led by Dr. Madhu Chennabasappa and he continued the lecture of the previous day on X-ray diffraction and crystallography. The first session of the day was concluded by revisiting some of the software for Rietveld refinement. The second session was led by Dr. Praveen Managutti, it is a hands-on training session and the instructor first demonstrated the use of the open source software like QualX and WinPLOTTR and the session ended with the final use of the software FullProf.

Day 6 programs of FDP were coordinated by Sacred Heart College, Chalakudy on 6 October 2021 and the resource person is Dr. Madhu Chennabasappa. The session began at 9.30 am. He continued the profile matching analysis on NaCl using WinPlotr and EDPCR and he explained the Rietveld refinement by using the example of  $Ba_{0.7}Zr_{0.3}TiO_3$ . He also shown another example of multiphase identification, profile matching and introduction of atoms. The second session began at 11.40 am by Dr. Praveen Managutti who gave a hands-on training for the participants.

Day 7 programmes of FDP were arranged on 07th October 2021 and were handled by Dr. Madhu Chennabasappa. Session 13 began with different spectroscopic techniques, mapping and chemical methods of analysis. The session was chaired by Dr. Dhanya I, Assistant Professor of Physics, Catholicate College, Pathanamthitta. Session -14 of the FDP programme is also handled by Dr. Madhu Chennabasappa. The session had a detailed discussion on X-ray photoelectron spectroscopy. He also discussed the simulation technique

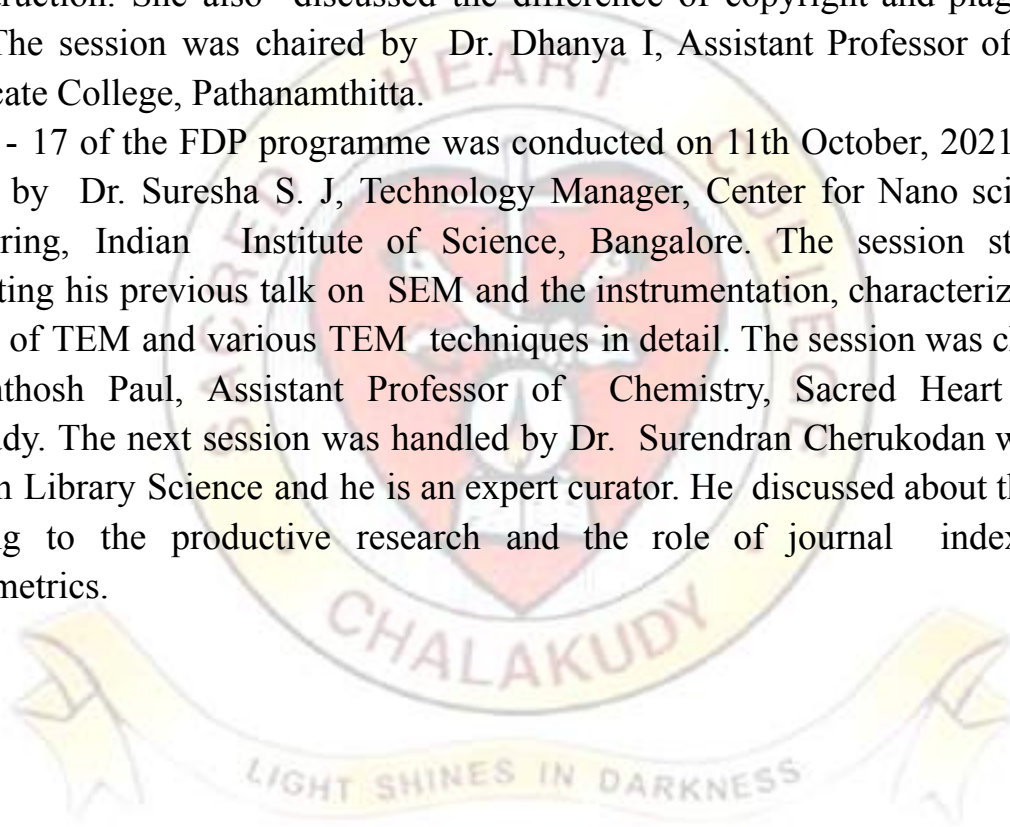
for fitting XPS data in detail with free ware. The session was chaired by Dr. Achamma George, Assistant Professor of Physics, Catholicate College, Pathanamthitta.

Session - 15 of the FDP programme was on 08th October 2021 and is handled by Dr. Suresha S. J, Technology Manager, Center for Nano science and Engineering,

Indian Institute of Science, Bangalore. The session began with fundamental idea related to Scanning Electron Microscopy and later the characterization and analysis of SEM in detail. The session was chaired by Dr. Achamma George, Assistant Professor of Physics, Catholicate College, Pathanamthitta.

Session -16 of the FDP programme was on 08th October 2021 and was handled by Dr. Bismi Gopalakrishnan, Professor, Dean, Faculty of Law, Head, School of Indian Legal Thought, Mahatma Gandhi University, Kottayam. The session began with requirements of copyright, copyright protection and fair dealing for research, study and instruction. She also discussed the difference of copyright and plagiarism in detail. The session was chaired by Dr. Dhanya I, Assistant Professor of Physics, Catholicate College, Pathanamthitta.

Session - 17 of the FDP programme was conducted on 11th October, 2021 and was handled by Dr. Suresha S. J, Technology Manager, Center for Nano science and Engineering, Indian Institute of Science, Bangalore. The session started by recollecting his previous talk on SEM and the instrumentation, characterization and analysis of TEM and various TEM techniques in detail. The session was chaired by Dr. Santhosh Paul, Assistant Professor of Chemistry, Sacred Heart College, Chalakudy. The next session was handled by Dr. Surendran Cherukodan who holds a PhD in Library Science and he is an expert curator. He discussed about the details regarding to the productive research and the role of journal indexing and Scientometrics.





## Dr. Santhosh Paul, faculty, SH College, is chairing the session -17



Day  
12  
of  
the

FDP programme was hosted by Christ College, Irinjalakuda on 12 October 2021. The first session of the day was led by Dr. Surendran Cherukodan. The resource person started the session by talking about the relevance of 'Productive Research'. He explained in detail the different citation indices and how they are calculated. The second session of the day

was handled by Dr. Priya Mahadevan, Department of Condensed Matter Physics and Material Science, S.N. Bose National Centre for Basic Sciences. She discussed about how to publish good papers in general and especially in Physics. The session attracted a lot of applause from the participants who engaged in active discussion with the speaker at the end of the session.

A feedback link was arranged to all participants after each session in order to evaluate the response of the participants to that particular session. At the end of every session participants gave excellent feedback in the chat box. On the basis of each session a quiz link was circulated among the participants on everyday in order to evaluate their level of understanding.

Also a project and assignment evaluation question was circulated among the participants to identify their output gained through this FDP programme.

The FDP programme actually gave a good platform for the teachers and research

scholar's in order to enhance their affinity towards materials science and its characterization techniques. Also it provides a better understanding regarding to research publication and its ethics. We believe that this FDP programme generated a fruitful outcome to all of our participants in India and abroad. Within the limitation of online mode this FDP programme won a huge success due to its extraordinary co-ordination and participation because we believe that the process of learning knowledge have no boundaries.



## Department of Chemistry

### Workshop cum Hands-on training on “Semi Micro Analysis”

The department organized a one-day Workshop cum Hands-on Training on “Semi Micro Analysis”. The programme was handled by Prof. Murugan S, HOD (Retired), Department of Chemistry, S. T. Hindu College, Nagerkovil, Tamilnadu. The workshop had given an ample opportunity for students to understand new technique of microanalysis, which is very essential for the laboratory practical work in B Sc. Lab.



Dr. Murugan is demonstrating the microscale experiments in the workshop cum hands-on training session



## **Hands-on Training On Glass blowing techniques**

The Department of Chemistry is organizing a one-day workshop cum hands-on training on the topic “Glass Blowing Techniques” on 17/01/2019 with the financial assistance of the Department of Biotechnology under the ‘STAR’ College scheme. Mr. Ramesh (CEO, Glass Blowing Company) is handling the session. The session was really very interesting and new to students. Various glassware like standard flask, beaker etc. was made in the programme.



## **Department Of Commerce**

### **Placement Readiness Workshop**

The Post Graduate Department of Commerce organised a Placement Readiness Workshop on 16/11/2017, in order to enhance the employability skill of the students. Dr. R. Vishal Kumar, HoD of the Department of Finance and K. Sambath Kumar, HoD of the Department of Marketing, Happy Valley Business School, Coimbatore were the resource persons of the workshop.

The workshop's aim was to explore the nature of students perception of their skills development. In fact, students had a low awareness of the skills that they were intended to develop and many of them were unaware of the skill requirements of employers. As a result of the session, personal development plans were used to bridge this gap and the experience gained from the session can be transferred to other contexts.



HoD Prof Tomy MG with the resource persons

# Department of Mathematics

## Workshop on Python Programming

A two day workshop on Python Programming for teachers and research scholars was organized by the Department of Mathematics during July 26,27, 2019.

**SACRED HEART COLLEGE**  
CHALAKUDY

RE-ACCREDITED BY NAAC WITH A+ GRADE WITH COA CLASS IN 2017

TWO DAY WORKSHOP ON  
**PYTHON PROGRAMMING**  
FOR TEACHERS & RESEARCH SCHOLARS

ORGANIZED BY  
**DEPARTMENT OF MATHEMATICS**  
DURING 26<sup>TH</sup> & 27<sup>TH</sup> JULY, 2019

Co-ordinator : Dr. Vijitha Mukundan  
9744503525 | vijithamukundan29@gmail.com

Registration Fee : ₹500

**DAY 1**  
26<sup>TH</sup> JULY, 2019

|                    |                               |
|--------------------|-------------------------------|
| 8.45A.M            | REGISTRATION                  |
| <b>SESSION I</b>   | BASICS OF PYTHON, PYTHON FLOW |
| 9 A.M - 10.30 A.M  | CONTROLS                      |
| <b>SESSION II</b>  | INTRODUCTION TO IDES(SPYDER,  |
| 10.45 A.M - 12 P.M | PYCHARM, JUPITER), DATA       |
|                    | STRUCTURES, FILES,            |
|                    | NUMERICAL PYTHON, EXCEPTIONS  |
| <b>SESSION III</b> | ROOTS OF NONLINEAR EQUATIONS  |
| 1 P.M - 2.45 P.M   |                               |
| <b>SESSION IV</b>  | DIRECT AND INDIRECT SOLUTIONS |
| 3 P.M - 4 P.M      | OF LINEAR EQUATIONS           |

 **SACRED HEART COLLEGE**  
DEPARTMENT OF MATHEMATICS



**DAY 2**  
27<sup>TH</sup> JULY, 2019

**SESSION V** DIFFERENTIATION AND INTEGRATION

9 A.M - 10.30 A.M

**SESSION VI** 2D & 3D VISUALISATION USING

10.45 A.M - 12 P.M MATPLOTLIB, CURVE FITTING

**SESSION VII** NUMERICAL SOLUTION FOR

1 P.M - 2.45 P.M ORDINARY DIFFERENTIAL EQUATIONS

**SESSION VIII** EIGENVALUE PROBLEM

3 P.M - 4 P.M



RESOURCE PERSON

**SREERAJ R**

HEAD OF THE DEPARTMENT  
COMPUTER SCIENCE ENGINEERING  
ROYAL COLLEGE OF ENGINEERING AND TECHNOLOGY

CHIEF PATRON

DR. SR. IRENE - PRINCIPAL

ORGANIZING COMMITTEE

MS. SMITHA DAVIS  
HOD MATHEMATICS

DR. NIDHIN T J

MS. LINET ROSLIN ANTONY

MS. AMALA MARY GEORGE

MS. GEETHU SIMON

MS. JIJIPPAUL A

MR. RAHUL M RAJU

**SACRED HEART COLLEGE**  
DEPARTMENT OF MATHEMATICS



**SACRED HEART COLLEGE**  
DEPARTMENT OF MATHEMATICS



Workshop on Python Programming on July 26,27, 2019.