

# Department of Chemistry

## ➤ Invitation

**Last Date for Registration - 10<sup>th</sup> April 2021**  
**Last Date for Paper Submission - 14<sup>th</sup> April 2021**

### Manuscript Submission

Research findings related to technological advancements in science are invited for oral presentation by third year UG students. The manuscript (not exceeding 10 pages) should be typed in MS Word document file in Times New Roman font of size 12 and 1.5 line spacing on A4 size along with title, name, phone number, email id and address of the authors. Margin: Left-1.5", Right, Top and Bottom side-1". Tables, figures and graphs should be numbered and must be placed inside the text and should be in jpeg or tif file. The author presenting the paper should be undrafted and sent to the Program Coordinator through E-mail to the following E-mail id: smcstarcollege@gmail.com

All the accepted papers will be published in proceedings with ISBN.

The papers should be submitted as per the following details

**Abstract:** should not exceed 300 words

**Keywords:** 4 to 7 words

**Introduction:**

**Materials and methods:**

**Results and discussion:**

**Conclusion:**

**References section format:**

**Journals:** Author (last name) AB (initials) Author BS, Title of

Article, Journal name, year, volume (issue), page numbers DOI: xxx/xxxx/PMO-xxxx.

**Books:** Author AB, Author BB, Author CC, Title of Book, Ed. Vol, Publisher, City, year, page numbers.

**Thesis:** Author Title, University, year's, pg.no

**NOTE: PAPERS ARE TO SUBMIT IN MICROSOFT WORD**

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#### Facor

Prof. G. Ramani, Secretary

St. Mary's College (Autonomous), Thoothukudi.

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Dr. N. A. J. Lucie Rose, Principal

St. Mary's College (Autonomous), Thoothukudi.

#### Program Coordinator

Dr. S. Anandha Jayanthi, Member

Overall coordinator & Member Secretary

DBT STAR College Scheme

Assistant Professor of Botany

St. Mary's College (Autonomous), Thoothukudi.

#### Convener

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Department of Chemistry

St. Mary's College (Autonomous), Thoothukudi.

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Department of Physics,

St. Mary's College (Autonomous), Thoothukudi.

Dr. S. Jagathis Devi, Associate Professor & Head

Department of Chemistry, Kamaraj College, Thoothukudi.

Dr. A. Sarathini, Associate Professor & Head

Department of Physics, Kamaraj College, Thoothukudi.

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Dr. S. Eshwari Venkatesh Srinivas, Associate Professor of Physics

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Dr. Prathima Lakshmi, Assistant Professor of Chemistry

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Dr. A. Nishu, Assistant Professor of Physics

Dr. L. Sathi, Assistant Professor of Physics

Dr. R. Saranya, Assistant Professor of Physics

Dr. A. Shreya, Assistant Professor of Physics

#### Kamaraj College, Thoothukudi.

#### Faculty - Department of Chemistry

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Dr. D. Karanagiri, Assistant Professor

Dr. E. Arun Prasad, Assistant Professor

Dr. G. Rajagopal, Assistant Professor

Dr. S. Varadachari, Assistant Professor

#### Faculty - Department of Physics

Dr. G. Narayanasami, Associate Professor

Dr. J. Prathima, Associate Professor

Dr. S. Hema Rani, Assistant Professor

Dr. S. Kannan, Assistant Professor

## STAR PROGRAMME

2020 - 2021

Sponsored By



Department of Biotechnology  
 Ministry of Science & Technology,  
 Government of India  
**National Webinar on  
 Technological Advancements in Science  
 (NWTAS 2021)**

April 16<sup>th</sup> and 17<sup>th</sup>, 2021

Organized by



**Marian Star Centre  
 School of Physical Sciences**

**St. Mary's College (Autonomous),**

Re-accredited by NAAC with 'A+' Grade  
 Thoothukudi - 628 001,  
 Tamil Nadu, India.



**In Collaboration with  
 Kamaraj College**

Thoothukudi - 628003,  
 Tamil Nadu, India.

### Registration Link

<https://forms.gle/NoLdDwvLgYLULEA>

marianstarcentredb2020@gmail.com

chemistry.smc@gmail.com

smcphy2012@gmail.com

### About the college

St. Mary's college (Autonomous), a catholic institution of higher education for women founded in 1948, plays a significant role in shaping the destiny of innumerable young coastal women in and around Thoothukudi. With a proud legacy of 72 years, the college has excelled in every discipline keeping in pace with the global trends in the academia. The college, affiliated to Maronmaniam Sundaranar University, Tirunelveli, offers graduate, post-graduate, M.Phil., and Ph.D., programmes in various disciplines and has attained Autonomous status in the year 2008. Recognizing the great potential within the campus, the NAAC has re-accredited the institution with 'A+' grade in its fourth cycle. A holistic education with an overall personality development is ensured by involving students in academic, curricular and co-curricular activities. The motto of the college is FIDE VIVANT (Live by Faith).

### About the DBT STAR Collage Scheme

The Star College Scheme has been initiated by Department of Biotechnology (DBT) in 2008 to support colleges and universities offering undergraduate education to improve science teaching across the country. The DBT identifies colleges with ambition and potential for excellence and provide academic and physical infrastructure for achieving excellence in teaching and unique exposure of students to experimental science. The Department has supported around 200 undergraduate colleges across the country in the past 9 years. The Star College scheme was sanctioned in March 2019. Four departments of the college namely Physics, Chemistry, Botany and Zoology have been recommended by the Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India, New Delhi, to receive financial assistance under the Star College Scheme.

### About the School of Physical Sciences

The School of Physical Sciences was established with the aim of dissemination of knowledge through teaching and research in the field of natural and applied sciences. The school consists of two departments - Department of Physics and Chemistry. The school has highly equipped and modernized facilities supported by excellent technical staff.

### About the Webinar

Science is a holistic understanding of the world, a fast developing one and every thing with the world then it is interdisciplinary. The disciplines of science are interlinked and the interdisciplinary link dominates in the world daily. This provides opportunities for the students to understand the importance and relevance of science in our lives, foster and encourage curiosity and enthusiasm about the natural world and appreciate the natural world and the physical environment and explore the link connects of the following strands: physical science, earth science, life science, technology and society, science process and healthy, health and the human body.

The Webinar on Technological Advancement in Science sponsored by the Department of Biotechnology, New Delhi, India and organized by the School of Physical Sciences, was aimed to create a diversity of opportunities for among the young undergraduate students.

The main objective of this webinar is to offer an interdisciplinary platform for students, to explore, understand and interact with network and discuss the recent trends and innovations in science and technology on any subject areas like nanotechnology, functional materials, quantum materials, biomaterials and more.

### Programme Schedule

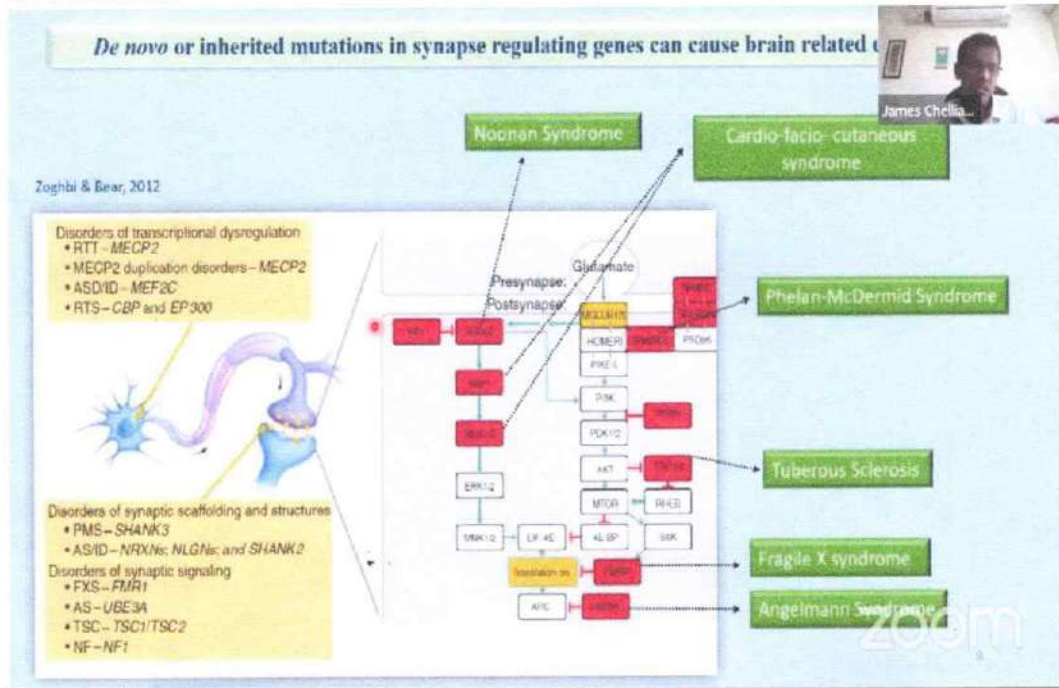
#### 16<sup>th</sup> April - 2021

9:00 A.M. - 9:30 A.M.	Inauguration
9:30 A.M. - 10:30 A.M.	<b>Session I</b>
<b>Topic:</b>	State of Engineering Materials in Advanced Technology
<b>Resource Person:</b>	Dr. V. Narayana, Assistant Professor of Physics, Sree Vidyapeetham Engineering College, Thoothukudi, Andhra Pradesh.
10:30 A.M. - 12:30 P.M.	Paper Presentation by III U.G. Physics students.
1:30 P.M. - 2:30 P.M.	<b>Session II</b>
<b>Topic:</b>	Polymers as Smart Materials for Self-Healing Technology
<b>Resource Person:</b>	Mr. S. Anil Raj, M.Tech., Senior Scientist, Vikram Sarabhai Space Centre ISRO, Thiruvananthapuram, Kerala.
2:30 P.M. - 4:30 P.M.	Paper Presentation by III U.G. Chemistry students.

#### 17<sup>th</sup> April - 2021

9:00 A.M. - 10:00 A.M.	<b>Session III</b>
<b>Topic:</b>	Tissue Regeneration: Gene Editing Tools in Biology
<b>Resource Person:</b>	Dr. P. K. Sathesh Kumar, Professor, Centre of Advanced Study in Botany, Bharathidasan University, Varanasi.
10:00 A.M. - 12 noon	Paper Presentation by III U.G. Botany Students
1:00 P.M. - 2:00 P.M.	<b>Session IV</b>
<b>Topic:</b>	Understanding Autism Spectrum Disorder Using Synaptic & Neuroanatomical Mutations
<b>Resource Person:</b>	Dr. James Clement, Associate Professor, Neurosciences Unit, Jawaharlal Nehru Centre For Advanced Scientific Research, Bangalore.
2:00 P.M. - 4:00 P.M.	Paper Presentation by III U.G. Zoology Students
4:00 P.M.	Voluntary Function

➤ Screenshot



➤ Certificate

## STAR PROGRAMME

### 2020-2021

Sponsored by  
Department of Biotechnology, Ministry of Science & Technology, Govt. of India, New Delhi

Organized by  
School of Physical Sciences, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu.

Reaccredited with 'A' Grade by NAAC

In Collaboration with  
Kamaraj College, Thoothukudi.

### Certificate

This is to certify that Mr/Ms. ELIZABETH REGINA T , III B.S.C PSYCHOLOGY of ST.MARY'S COLLEGE AUTONOMOUS THOOTHUKUDI has participated in the National Webinar on "Technological Advancements in Science (NWTAS 2021) " on 16<sup>th</sup> and 17<sup>th</sup> April 2021.

*Arockia Jenecius Alphonse*

**Dr. Sr. Arockia Jenecius Alphonse**  
Overall Coordinator & Member Secretary  
DBT STAR Scheme  
St. Mary's College (Autonomous), Thoothukudi

*Jessie Fernando*

**Dr. Sr. Jessie Fernando**  
Associate Professor & Head,  
Department of Physics  
St. Mary's College (Autonomous)  
Thoothukudi

*J. Martin Raji*

**Dr. J. Martin Raji**  
Associate Professor & Head,  
Department of Chemistry  
St. Mary's College (Autonomous)  
Thoothukudi

*Lucia Rose*

**Dr. Sr. A. S. J. Lucia Rose**  
Principal  
St. Mary's College (Autonomous)  
Thoothukudi



## ➤ Report

The Marian Star Centre, School of Physical Sciences, organised A **National Webinar on “Technological Advancements in Science and Technology”** on 16<sup>th</sup> & 17<sup>th</sup> April, 2021, sponsored by DBT, Star College Scheme, New Delhi. All the U.G students from the department of Physics and chemistry and III UG students from the department of mathematics, computer science, Botany, Zoology, Microbiology and Psychology participated in the webinar ( 411) along with participants from various institutions.

On the first day the webinar began with a prayer led by Dr.Sr.Jessie Fernando, Head and Associate Professor, Department of Physics, and she welcomed the gathering as well. Our Principal, Dr. Sr. A.S.J. Lucia Rose extended her words of glee to the gathering through her inaugural address. Mrs. A. Lucas Rexceline, Associate Professor of Physics proliferated her spell of gratitude. Dr. V. Nirupama, Assistant Professor of Physics, SreeVidyanikethan Engineering College, Tirupathi, Andhra Pradesh was invited to share her observance in the first session on the topic “Role of Engineering Materials in Advanced Technology”. The speaker gave an abbreviate talk on, the basics of material engineering, types of biomaterials, uses of biomaterials , Nano materials and its properties , metallic glasses, applications of meta material and claytronics, shape memory alloys and different shape memory effects. She gave the participants a clear idea on the types of materials and highlighted the properties and applications of bio materials. The information about claytronics and its types was the top notch of the session. After the session the participants (8+3) were asked to present their research papers in the field of Physics. The rapport of the resource person made the participants free to answer the questions raised by the resource person regarding the project. Then the II U.G maths students(5) presented their project papers. This session was chaired by Dr. P. Anbarasi Rodrigo, Coordinator and Assistant Professor of Mathematics (SSC). The participants sketched out ardent gratitude through their feedback.

The next session commenced in the afternoon. The speaker, Mr.S.Joel Raj, Senior Scientist, Vikram Sarabhai Space Centre Organisation, Thiruvananthapuram, Kerela gave a detailed talk on the topic “Polymers as Smart Materials for Self Healing Technology”. The resource person in his talk highlighted the invention of self - healing materials and their types, Self-healing concept using embedded microcapsules, design of self healing materials, working of Lamborghini terzo , composition of self healing concrete, pPros and cons of self healing concrete, smart materials and their technical applications and polymerization mechanism of DCPD (Dicyclopentadiene) with Grubbs catalyst.

Successively the participants (8+2) were asked to present their research papers in the field of Chemistry. They were enthusiastic in answering the questions raised by the resource person. The students held out thankful hearts to the institution and the Star College Scheme for such a wonderful opportunity. This was followed by paper presentation by the students (5) of computerscience. This session was chaired by Ms.C.Nayantra Mascarenhas.

On 17<sup>th</sup> April 2021, the second day of the National webinar Dr.A.Lakshmi, Assistant Professor of Chemistry introduced the chief Guest Dr. P.K, Satheesh Kumar, Professor, Centre of



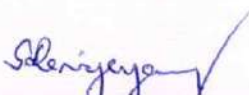
Advanced study in Botany, Banaras Hindu University, Varanasi . He delivered a lecture on the topic Tailor Made Organisms: Genome Editing tools in Biology. He focused his topic on the nucleus present in the cell and its nature, the pattern similarity present in the prokaryotic cell and gene editing tools. He also explained the changes that DNA will have in the cell due to different radiations. In addition he discussed in detail about CRISPR the clustered regularly interspaced short Palindromic repeats-associated protein which is used in Genome editing. He gave a clear vision on editing tools in biology which was highly helpful for the Undergraduate students. The resource person has also chaired the paper presentation session by Botany students (7) . Following the Botany students, 5 Microbiology students have presented their papers. The presentation by Microbiology students was chaired by Dr. V. Joys Selva Mary Albert, SSC Coordinator, St. Mary's College (Autonomous), Thoothukudi.

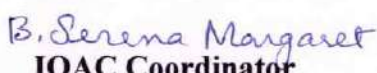
The second Technical session was led by Dr. James Clement, Associate Professor, Neuroscience Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. Dr. A. Parveen Sulthana, Assistant Professor of Chemistry, St. Mary's College (Autonomous), Thoothukudi introduced the chief guest. Undergraduate students of School of Physical Sciences, Biological Sciences and computing sciences participated in this National Webinar. He delivered the lecture on the topic Understanding Autism Spectrum Disorder Using Syngap 1 Heterozygous Mutation. The resource person explained the importance of brain , its function and disorder , how it get signals through neurons and how messages are transferred. He also explained about synapses, neuronal connections and the brain functions, about the drugs that are given according to the symptoms diagonosed, how the symptom based therapy detects the behaviour in each stages of life like childhood and adulthood and finally about the study of neurons that lead to disorder and how the social changes occurs helps to cure the disorder.

He also chaired the presentation session for 8 zoology students. Then 4 Psychology students presented their paper and the session was chaired by Dr. S. Jeyabharathi, SSC Coordinator of Psychology

Finally the webinar came to an end with valedictory function. Dr. B. Divya, Assistant Professor of Chemistry, St. Mary's College (Autonomous), Thoothukudi has welcomed all and the Valedictory Address was given by Dr. B. Serena Margarete, IQAC Coordinator, Assistant Professor of English, St. Mary's College (Autonomous), Thoothukudi. The paper presentation winners of each Discipline was announced by Dr. B. Serena Margarete.

Then Vote of thanks was proposed by Dr. IrudayaAntonat Sophia, Assistant Professor of Chemistry, St. Mary's College (Autonomous), Thoothukudi.

  
**Head of the Department**  
Head  
Department of Chemistry,  
St. Mary's College (Autonomous),  
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**B. Serena Margarete**  
**IQAC Coordinator**  
**IQAC Co-ordinator**  
**St. Mary's College (Autonomous)**  
**Thoothukudi**

  
**Principal**  
**St. Mary's College (Autonomous)**  
**Thoothukudi - 628 001.**