



Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Department of Physics & Electronics
A) A Summary Report of the Activity

1) Title of Programme:		Study Tour to Swami Ramanand Teerth Marathwada University, Nanded		
2) Name of Organizing Department/Unit:		Physics and Electronics		
3) Name of the Coordinator(s)/ Convener(s)/ Organizer(s) of the Programme:		Chief Organizer: Dr Mahadev Gavhane Organizing Secretary: Dr. A.A. Yadav Convener: Mr Swapnil Undalkar		
4) Date(s) of the Programme:		11-13 January 2023		
5) Venue/Mode:		Swami Ramanand Teerth Marathwada University, Nanded		
6) Target Group:		UG and PG students		
7) Number of Participants:		Male	Female	Total
A separate list with signatures be maintained in the department/Unit)	Teaching	01	00	01
	Non-Teaching	--	--	--
	Students	08	06	14
8) Name(s) and details of Resource Person(s), if any:		--		
9) Total Expenditure for the Programme:		15000/-		
10) Source of Funding:		Student Collection		

B) Report

i. Title:

Study Tour to Swami Ramanand Teerth Marathwada University, Nanded

ii. Introduction

Education is one of the most important investments in life. The Study Tour can play an important role in helping one make the right choice. Educational trips that form a part of the college curriculum are very valuable as they provide the students the opportunity of learning through travel, especially to places that they may not otherwise get to visit. Most important, however, these trips emphasize the attentive mind, enabling a sense of discovery and a quality of quietness. Making Educational Tours a part of Curriculum is a good idea to fine tune students' knowledge. Three days Study Tour was organized by the Department of Physics and Electronics to Swami Ramanand Teerth Marathwada University, Nanded and to attend the International Conference on Advances in Renewable Energy (ICARE-2023).

iii. Objectives of the Programme/ issues addressed

- To enhance knowledge and understanding.
- To promote teamwork and social skills.
- To encourage independent learning.
- To promote creativity and critical thinking.
- To promote a break from the monotony of classroom learning.

iv. Details of Participants

14 (08 Male 06 Female) visited Swami Ramanand Teerth Marathwada University, Nanded.

v. Brief Summary of Events/ Sessions

It was the first morning in the conference hall of Swami Ramanand Teerth Marathwada University, Nanded. Inauguration of three days international conference was started and for that Dr. Udhav V. Bhosle, Vice-Chancellor was present as an inaugurator. Dr. Mrs. M. P. Mahabole, Director, School of Physical Science, Prof. Rajaram Mane and their departmental team were present for the same. The resource persons from all over India delivered talks and enlightened the participants. Faculty member Mr. Swapnil Undalkar presented a poster on the Synthesis and Properties of Tin Sulfide Thin Films Deposited by Spray Pyrolysis. Our students interacted with resource persons and enhanced their knowledge. After attending conference talks for two days, the participants moved towards the Research laboratories of the School of Physical Science. The respective research scholars introduced different experiments and some characterization

techniques. The Optical Telescope was one of the highlighted instruments used in the Astrophysics Lab. After the valedictory program the students visited Gurudwara, Nanded, located on the bank of the Godavari River. The accommodation and hospitality provided by the home university. We were back to what we call our home, Latur and with this, our study tour came to an end.

"They say traveling is not about the destination, it's about the journey."


vi. Conclusion, with Feedback on the Programme

Educational tour provided students with a sense of excitement and adventure, which led to increased motivation and engagement in learning. The communication and critical thinking power of students are enhanced.

vii. Any Appendix If Necessary

Not Applicable

Date: 16.01.2023


HOD
HEAD
Department of Physics & Electronics
Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)




Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

C) Geotagged photographs:



At Astrophysics lab with Research Scholar



At Research lab with Research Scholar



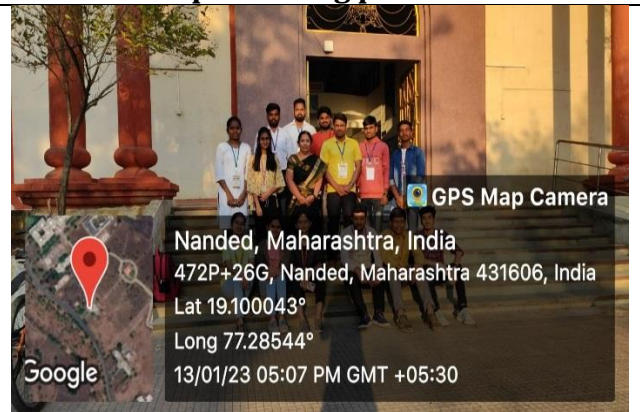
Main Entrance SRTMU, Nanded



Our Faculty Mr. Swapnil Undalkar presenting poster



At poster presentation: with Prof. Rajaram Mane Sir



With Dr. Mrs. M. P. Mahabole, Director, School of Physical Science



Gurudwara, Godavari River at the city of Nanded

D) Link for videos if any: **Nil**

E) Brochure:

Swami Ramanand Teerth Marathwada University, Nanded-431606 (M.S.) India
Established on 17th September 1994, Recognized by the UGC Uls 2(f) and 12(B) NAAC Re-accredited 'B++' Grade

"INTERNATIONAL CONFERENCE ON ADVANCES IN RENEWABLE ENERGY" (ICARE - 11-13 JANUARY, 2023)
Organized by

School of Physical Sciences in Association with Society for Materials Chemistry, BARC Mumbai

Abstract/Synopsis
 Swami Ramanand Teerth Marathwada University, Nanded, established on September 17, 1994, caters to the western part of the Marathwada region of Maharashtra covering four districts namely, Nanded, Latur, Parbhani and Hingoli. University has 14 Schools on campus, 4 schools in sub-campus, Latur and sub-campus at Parbhani, a research college New Model Degree College at Hingoli and academic and research centre like Dr. Babasaheb Ambedkar Chair and Study Centre, Sri Guru Govind Singh Sahayana Sanstha and Research Centre, Women's Study Centre at the main campus and Late Usharanand Prabhu Tribal Development and Research Centre at Khatav. University has 300 plus affiliated colleges under its jurisdiction offering 160 programmes with student strength of 1.85 lakh and 4000 plus students through distance education mode offering programs in science and technology, humanities, commerce and management and multidisciplinary studies. University hosts more than 70 foreign students across five countries. University received financial assistance from PUSA, DST, UGC, etc. It develops of students infrastructure amenities, research and extension activities. Teachers have internal, national and international work loads. Teachers have got research projects worth Rs. 12.5 crores, where academics and social value is remarkable. Teachers and students have many publications in peer reviewed journals in their credit and received recognition at the national and international level.

Objectives
 To get familiar with advanced research activities going on in renewable energy through invited talks, speeches and presentations by highly renowned and local scientists across the globe.
 To provide a common platform to scientists, faculties, engineers and scholars working on various aspects of renewable energy including but not limited to solar cells, electrochemical cells, smart and functional materials for energy, battery, super-capacitors, fuel cells, hydro-power energy, piezoelectric energy, nuclear energy etc.

Key areas including but not limited to:

- Solar energy
- Hydrogen energy
- Battery and fuel cells
- Wind energy
- Nuclear energy
- Electroanalysis and Photoanalysis
- Piezoelectric
- Wind energy
- Hydrogen energy
- Nuclear energy
- Thermal energy
- Geo-energy

ACCOMMODATION
 The University has a Guest house with and without AC Rooms. The accommodation will be provided on first come first serve basis. On Payment basis Registered Participants who require accommodations should intimate organizers well in advance. Booking is available in the hotels or may contact organizing secretary. There are good accommodations available in Nanded City with hotels like: 01. Hotel Vinay Kumar (Gulmohar Road), 02. Hotel City Pride, 03. Hotel Chandrak, 04. Hotel Taj Park, 05. Hotel Anandra Palace, 06. Nagarjun Hotel, 07. Hotel Goldenrod, 08. Hotel Normal Palace, 09. Hotel Lata Institute, 10. Hotel Arun (Museum of R. 2000 - 4 up to Rs. 2000 for 24 hours).

Chief Guest
 Dr. Arvind H. Bhosale
 Hon'ble Vice-Chancellor, SRMVM

Guest
 Dr. Jagdishrao Khosla
 Hon'ble Pro-Vice-Chancellor, SRMVM

Deans
 Dr. J. M. Rajhans
 Deans, Faculty of Science & Technology

Organizing Committee
 Prof. N.P. Mahabale (Director, SRM)
 Prof. Rajaram S. Mane (Hon'ble, I.A.C. Co-Chairman)
 Prof. D. A. Kanburhakar (Member)
 Prof. M. K. Patil (Member)
 Dr. A. S. Sonde (Secretary)
 Dr. S. K. Singh (Member)
 Dr. Sarjanshinde (Registration/Publisher)

Abstracts/Invited Talks/Plenary
 Abstracts are invited to submit their original research work on the topic listed and submit one page abstract or graphical abstract in English (Font: Times New Roman, Size 12 and Spacing: 1.5). Abstracts should be submitted to: icare.srmvm@gmail.com or rajarams@srvmvm.ac.in or through <https://www.srmvmvm.ac.in> along with the submission of Abstracts by 10 November, 2022. All accepted abstracts will be published during conference and selected abstracts will be called upon for full length papers a separate journal issue in November/December 2023.

Registration form can be downloaded from University website:
<http://www.srmvmvm.ac.in> or <https://bit.ly/3p9p9v9>
 Kindly return filled registration form to: Dr. A. S. Sonde, Convener
 (ICARE-2023)
 E-mail: icare.srmvm@gmail.com or rajarams@srvmvm.ac.in
 School of Physical Sciences, on or before 10 December 2022.

Venue:
 Senate Hall, Administrative Building, SRM University, Vishnupur, Nanded-431606 (India)

**For more details/queries/registrations please visit website to Convener Co-convener, International Conference, "Advances in Renewable Energy" School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, (M.S., India)
 Website: www.srmvmvm.ac.in
 Ph: 02064271342/202982**

**International Conference on Advances in Renewable Energy (ICARE)-2023
 Synthesis and Characterization of Spray Deposited Tin Sulfide Thin Films**

Swapanil S. Undalkar, Abhijit A. Yadav*
 Department of Physics and Electronics
 Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Abstract
 Tin sulfide (SnS₂) thin films have been spray deposited with different SnS₂ ratios at constant substrate temperature of 200°C. XRD studies revealed the polycrystalline nature of tin sulfide thin films with orthorhombic crystal structure. The crystallite sizes are found to be in the range of 17-21 nm with increasing SnS₂ ratios. Lattice strains of tin sulfide thin films decreased with increasing SnS₂ ratios. Dislocation density is observed to be in the range of 2.25-5.10 nm⁻². FESEM images show SnS₂ ratio dependent surface morphology with formation of needles and fine spherical shaped grains with smooth surface. The optical band gap of the sulfide thin films varies from 1.43 to 2.0 eV. The structural and optical properties tin sulfide thin films indicate that these films can be utilized in thin film solar cells.

Sn:S	Band Gap Energy (eV)	Micro Strain	Dislocation Density
1:3	1.84	23.85 × 10 ⁻²	5.10
1:4	1.53	23.0 × 10 ⁻²	3.46
1:5	1.51	15.0 × 10 ⁻²	2.25

Experimental Section

Spray Pyrolysis Process: A schematic diagram showing the spray pyrolysis process where a solution of tin and sulfur precursors is sprayed onto a substrate heated to 200°C, resulting in the formation of SnS₂ thin films.

FE-SEM: Scanning electron microscopy images showing the surface morphology of the spray-deposited SnS₂ thin films, which exhibit a porous structure with spherical grains.

Conclusions

- X-ray diffraction study revealed the polycrystalline orthorhombic structure with lattice parameters a (0.395 nm), b (1.142 nm) & c (0.438 nm).
- Optical study shows that the band gap energy decreases with increasing SnS₂ ratio.
- Morphological properties revealed that the film deposited on ultrasonically cleaned substrate were uniform, smooth and adherent.

Brochure of ICARE-2023

Poster Presentation in ICARE-2023

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"INTERNATIONAL CONFERENCE ON ADVANCES IN RENEWABLE ENERGY" (ICARE, 11-13 JANUARY, 2023)
Organized by

School of Physical Sciences in Association with Society for Materials Chemistry, BARC Mumbai

CERTIFICATE

This is to Certify that Prof./Dr./Shri./Smt./Miss. Kumbharkar Sandhya Subhash University/Institute/College Rajarshi Shahu Mahavidyalaya, Latur has delivered a Talk/ Participated/ Poster Presented at the **"INTERNATIONAL CONFERENCE ON ADVANCES IN RENEWABLE ENERGY" (ICARE - 2023)** Organized by School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, in Association with Society for Materials Chemistry, BARC, Mumbai during January 11-13, 2023

Dr. Arvind H. Bhosale
 Convener

Prof. Rajaram S. Mane
 Co-Convener

Prof. Megha P. Mahabale
 Director, School of Physical Sciences

Swami Ramanand Teerth Marathwada University, Nanded-431606 (M.S.) India
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"INTERNATIONAL CONFERENCE ON ADVANCES IN RENEWABLE ENERGY" (ICARE, 11-13 JANUARY, 2023)
Organized by

School of Physical Sciences in Association with Society for Materials Chemistry, BARC Mumbai

CERTIFICATE

This is to Certify that Prof./Dr./Shri./Smt./Miss. Bhosale Tanuja Malojji University/Institute/College Rajarshi Shahu Mahavidyalaya, Latur has delivered a Talk/ Participated/ Poster Presented at the **"INTERNATIONAL CONFERENCE ON ADVANCES IN RENEWABLE ENERGY" (ICARE - 2023)** Organized by School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, in Association with Society for Materials Chemistry, BARC, Mumbai during January 11-13, 2023

Dr. Arvind H. Bhosale
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Prof. Megha P. Mahabale
 Director, School of Physical Sciences

Certificates of ICARE-2023

Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Department of Physics & Electronics

List of students

Study Tour to Swami Ramanand Teerth Marathwada University, Nanded

Sr. No	Name of Students	Class
1.	BOYANE VIRAJ UMAKANT	B. Sc II
2.	POUL MADHAV SATISH	B. Sc II
3.	BHINGOLE VISHNU DATTATRAY	B. Sc II
4.	KUMBHARKAR SANDHYA SUBHASH	B. Sc III
5.	HALKARE MEGHNA MADHAV	B. Sc III
6.	RAJE SHWETA CHANDRAKAN	B. Sc III
7.	BHOSALE TANUJA MALOJ	B. Sc III
8.	HELAMBE SAKSHI SANJAY	B. Sc III
9.	BOCHKARI GAJANAN KAILAS	M. Sc II
10.	DEONIKAR SAYALI JALINDARNATH	M. Sc II
11.	GUND SURAJ MADHUKAR	M. Sc II
12.	GUND SURAJ MADHUKAR	M. Sc II
13.	PATHAN ASIF BALEKHAN	M. Sc II
14.	WADJE VIVEK NAGORAO	M. Sc II

Date: 16.01.2023


HEAD

Department of Physics & Electronics
Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)




Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur