Proceedings

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ABOUT THE STUTI TRAINING PROGRAM

Synergistic Technological Training Program Utilizing the Scientific and Infrastructure (STUTI) scheme is intended for the capacity building of human resources through open access to Science & Technological infrastructure across the country by organizing specialized training programs on DST-supported R&D equipment targeting Ph.D. Scholars, Post-Doctoral Fellows, Scientists, Faculty, etc. are actively involved in intensive research. The role of Science and Technology is pivotal for the evolution of mankind. The program is being organized as part of Azadi ka Amrit Mahotsav. The program consists of both theory and as well as hands on experience with various instruments, supported by DST. The uniqueness of the program includes minimum four hours' theory and remaining 50% of the duration is on practical training on the equipment. Effort would be made for hands-on use of equipment for demonstration/ characterization by each participant. The program's aim is to promote the research collaborations to the maximum extent. The program will be open to a broad audience interested in acquiring in-depth knowledge on the ideas and advancements in areas of SEM, XRD, AFM, UV Visible spectroscopy, FTIR, Raman, TGA/DSC, etc. After completion of the workshop, participants can appreciate how these techniques help in understanding materials, correlating structure-property relation and eventually for elucidating the structure of existing and newly discovered materials. This will not only enable them to build up a fundamental thought process of characterization techniques but also help in interpreting their own research findings more efficiently. This training program provides a platform for interaction and exchange of innovative ideas on current trends in the fields of Science and Technology, with talks by eminent people in the field.

ABOUT NIT SRINAGAR

National Institute of Technology, Srinagar is one of the premier Educational Institutes in the Northern Regions of the country. It was established in 1960 and has been one of the eighteen Regional Engineering Colleges sponsored by the Govt. of India during the 2nd Plan. The Institute acquired the status of National Institute of Technology with deemed to be University status during August, 2003 and attained full autonomy in its Academics. The Institute is situated at the banks of world-famous Dal Lake, with the far-famed Hazratbal Shrine on other side of the campus. NIT Srinagar is a residential Institute with accommodation facility in Hostels and Staff-Quarters. There

are four Boys and one Girls hostel which swallops about 1500 boys and 200 girls. Besides running the B. Tech Programme the Institute also offers M. Tech programme in many streams. In addition to that a large number of students are registered for M.Phil. and Ph.D. Programmes.

Facilities and amenities are available at the institution such as NCC, NSS, Bank, Consumer cum Society, Shopping Complex, Recreational Centre, Dispensary with Ambulance, Guest House, Students Activity Centre, Gymnasium, Internet Centre, Telephone Booths, Fax Services, Diesel Generator, Bus Facility. The Institution has an Industry Interaction cell which was established in 1989 with the aim to remain at the fore-front on the Scientific and Technological development and to share its experience with industries in utilizing. Man-power and other resources are available at the institute effectively with the assistance of the participating industries. The Institute has one of the best technical library in J&K State.

ABOUT DEPARTMENT OF PHYSICS

Since its inception, the Department of Physics is offering the General Physics course Engineering Physics for all branches of B. Tech. students during first and second semesters, respectively. In addition, the department offers several electives to various branches. In 2015, the Department has started P.G Programme in Applied Physics and the programme has received many accolades across the country. In this programme, we have offered intrinsically challenging and didactically inspiring courses. The Department has full-fledged laboratories for P.G Students, Research Scholars and offers Ph.D. program in Solid state physics, Materials science, Nanotechnology, Nuclear physics and in renewable energy sectors. Presently, the department has (07) faculty members. Department has been supported under DST Nano Mission, TEQIP III -World Bank Assisted Project and DST FIST. In order to inculcate the academic culture, the department regularly organizes lecture/quiz competitions and invited talks by the eminent scientists under the title, “Beyond the Class Room Lecture Series”. So far the department has produced maximum M. Phil. and Ph. D. scholars in the Institutes.

ABOUT MECHANICAL ENGINEERING DEPARTMENT

The Department of Mechanical Engineering offers a unique opportunity in terms providing first-class pedagogy and world class facilities for conducting cutting-edge research. Being one of the oldest departments of NIT Srinagar, the department has

evolved into one of the finest in terms of teaching curriculum and methodology supported by a well-organised and adequately funded research program. We have a very well-established B. Tech program complemented by two M. Tech programs in Mechanical System Design and Industrial Tribology and Maintenance Management. The masters' students are admitted on the basis of a valid GATE score, and some additional seats are reserved for meritorious sponsored candidates. The Research Scholars (PhD) are admitted to the department every year on the basis of a rigorous examination conducted by the institute.

ABOUT PHYSICS DEPARTMENT (ALIGARH MUSLIM UNIVERSITY)

The Physics Department of the Aligarh Muslim University, Aligarh (UP), India was established in 1912. The Department has rich teaching and research traditions since its inception and the first Ph.D. in Physics was awarded in 1926. Over the years, the growing international reputation of the Department has enabled it to join several international collaborations such as ALICE, CBM, PANDA etc., with Universities like University of Valencia, Spain; University of Tokyo, Japan; Universitat Erlangen, Germany etc. The faculty members are also involved in national collaborations viz. India based Neutrino Observatory Project. Faculty members are also collaborating with the scientists working at TIFR Mumbai, BARC Mumbai, IUAC New Delhi, VECC Kolkata, IUCAA Pune, UGC-DAE-CSR Kolkata & Indore, JNU New Delhi, IIT-Bombay, IIT-Ropar etc. The Department's illustrious legacy and its continuous stride in academic excellence over many decades have been duly acknowledged by the University Grants Commission, New Delhi, India and Department of Science & Technology, New Delhi, India resulting in the endowment of financial assistance through schemes such as DRS-SAP, DSA phases I, II & III, COSIST, FIST and PURSE.

TOPICS COVERED

The main theme of this training program is to aware the participants regarding the sophisticated instruments SEM, XRD, AFM, UV Visible spectroscopy, FTIR, Raman, TGA/DSC, etc. The training program includes theory lectures as well as demonstration/Hands on Training sessions on the sophisticated instruments.

One Week Training Program on Material Characterization Techniques

Under

Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)

28th June to 4th July 2022 **[Venue: High-Tech 5]**

Sponsored by: Department of Science & Technology

Organized by

Departments of Physics and Mechanical Engineering Department of National Institute of Technology, Srinagar (J&K) in joint collaboration with the Department of Physics, Aligarh Muslim University, Aligarh

08:30AM – 09:00AM	REGISTRATION [*Entrance High-Tech 5*] **[Day 1 Tuesday, June 28, 2022]**
Inauguration Program ** [Day 1 Tuesday, June 28, 2022 @ 3:30 PM - 4:45 PM]	
Time (IST)	**Event**
03:30PM – 03:35PM	Introduction about the Programme by Dr. Vijay Kumar
03:35PM – 03:40PM	Felicitation of Guests
03:40PM – 03:45PM	Welcome Address by HOD Physics, Dr. M. A. Shah
03:45PM – 03:50PM	Address by HOD Mechanical Engineering Department, Prof. Nazir Ahmad Sheikh
03:50PM – 03:55PM	Address by Dr. M Wassi Khan, STUTI Co-PI PMU Aligarh Muslim University
03:55PM – 04:10PM	Address by Guest of Honor Prof. M.F. Wani, Dean R&C, NIT Srinagar
04:10PM – 04:20PM	Address by Guest of Honor Prof. S. K. Bukhari, Hon'ble Registrar, NIT Srinagar
04:20PM – 04:30PM	Presidential Address by Prof. Rakesh Sehgal, Hon'ble Director, NIT Srinagar
04:30PM – 04:40PM	Address by Chief Guest Prof. Anil P. Kulkarni, Retired Principal, H.V. Desai College, Pune
04:40AM – 04:45PM	Vote of Thanks by Dr. Mukund Dutt Sharma followed by High-Tea

One Week Training Program on Material Characterization Techniques [Technical Program]

Day/Date	Session -1 9:30 am to 11.00 am		Session -2 11.30 pm to 1.00 pm		Session-3 (Hands on Training) 2:00 pm to 5.30 pm
Day 1 **June 28, 2022** **(Tuesday)**	**Lecture - 1** **Dr. M. A. Shah** Department of Physics, NIT Srinagar ***Title:*** *A revolution in Photonic Devices*	**Tea break**	**Lecture - 2** **Dr. Aijaz Ahmad Dar** Department of Chemistry, University of Kashmir Srinagar ***Title:*** *Structure property relationship in molecular solids by using single crystal XRD*	**Lunch break**	**Demo & Q&A Session: 1** **Dr. Aijaz Ahmad Dar / Dr. Mohd Nadeem Bhat/ Er. Adil Nazir/** Group 1- WDXRF Group 2- UV-Vis/TGA Group 3- Rehometer & Particle size analyzer Group 4- 3 Axis Laser Texturing
Day 2 **June 29, 2022** **(Wednesday)**	**Lecture – 3** **Dr. M Wassi Khan** Department of Physics, Aligarh Muslim University Aligarh ***Title:*** *Transmission Electron Microscopy: Instrumentation & Applications*		**Lecture - 4** **Dr. Manzoor Ahmad Mir** Head, Bioresources, Kashmir University ***Title:*** *Characterization of compounds from Medicinal plants through LCMS-HR for Breast Cancer Treatment*		**Demo & Q&A Session: 2** **Dr. M Wassi Khan/ Dr. Mohd Nadeem Bhat/ Er. Adil Nazir/ Er. Nayeem Zahoor/ Er. Mufti Taseer** Group 1- X-ray Diffraction Group 2- Nanomechincal system Group 3- Multi Target Sputtering system Group 4- FESEM
Day 3 **June 30, 2022** **(Thursday)**	**Lecture – 5** **Dr. Harkirat Singh** Department of Physics, National Institute of Technology Srinagar ***Title:*** *Low temperature and STM*		**Lecture - 6** **Prof. M. F. Wani** Dean Research & Consultancy, NIT Srinagar ***Title:*** *Surface modification techniques-surface coating and surface texturing*		**Demo & Q&A Session: 3** **Dr. M. A. Shah / Dr. Mohd Nadeem Bhat/ Er. Adil Nazir/ Er. Nayeem Zahoor/ Er. Mufti Taseer** Group 1- Nanomechincal system Group 2- Multi Target Sputtering system Group 3- FESEM Group 4- X-ray Diffraction
Day 4 **July 01, 2022** **(Friday)**	**Lecture - 7** **Prof. Rakesh Sehgal** Director, National Institute of Technology Srinagar ***Title:*** *Biomaterials for Body Implants*		**Lecture - 8** **Dr. Monika Koul** University of Delhi ***Title:*** *Fluorescence microscopy and atomic absorption spectrophotometry in multidisciplinary research*		**Demo & Q&A Session: 4** **Dr. Monika Koul / Dr. Mohd Nadeem Bhat/ Er. Adil Nazir/ Er. Nayeem Zahoor/ Er. Mufti Taseer** Group 1- Multi Target Sputtering system Group 2- FESEM Group 3- X-ray Diffraction Group 4- Nanomechincal system

One Week STUTI Training Program on R&D Equipment [Technical Program]

Date	Session -1 09:30 am to 11:00 am		Session -2 11:30 pm to 1:00 pm		Session-3 (Hands on Training) 2:00 pm to 5:30 pm
Day 5 **July 02, 2022** **(Saturday)**	**Lecture – 9** **Dr. Jigneshkumar V. Rohit** *Department of Chemsitry, National Institute of Technology Srinagar* ***Title:*** *Use of nanomaterials in spectroscopic analysis*	**Tea break**	**Lecture – 10** **Dr. Mohd Nadeem Bhat** CRFC, National Institute of Technology Srinagar ***Title:*** *Multiscale structural characterization of Metallic Materials*	**Lunch break**	**Demo & Q&A Session: 5** **Dr. Rajendra S. Dhaka/ Dr. Mohd Nadeem Bhat/ Er. Adil Nazir/ Er. Nayeem Zahoor** Group 1- FESEM Group 2- X-ray Diffraction Group 3- Nanomechincal system Group 4- Multi Target Sputtering system
Day 6 **July 03, 2022** **(Sunday)**	**Lecture - 11** **Dr. Rajendra S. Dhaka** Associate Professor, Department of Physics, Indian Institute of Technology Delhi ***Title:*** *Photoelectron Spectroscopy: A tool to study electronic structure of materials*		**Lecture 12** **Dr. Jagdish Kumar** School of Physical and Material Sciences, Central University of Himachal Pradesh ***Title:*** *The quantum foundation for material characterization using density functional theory*		**Demo & Q&A Session: 6** **Dr. Jagdish Kumar** **Hands-on-session - I:** (01 Hour): Computing ground state energy, lattice parameters, electronic band structure and density of states for crystals using density functional theory **Hands-on-session - II**: (01-Hour): Exploring magnetism, lattice vibrations, thermal and superconducting properties using DFT, **Hands-on-session - III** (01-Hour): Doubts cum discussion session with participants
Day 7 **July 04, 2022** **(Monday)**	**Lecture - 13** **Dr. Jagdish Kumar** School of Physical and Material Sciences, Central University of Himachal Pradesh ***Title:*** *Theoretical pathway for computing material properties*		**Lecture – 14** **Dr. Anurag Gaur** Department of Physics, J.C Bose University of Science & Technology, Faridabad ***Title:*** *Scanning Electron Microscopy (SEM)*		**Valedictory Session [2:30 pm to 4.30 pm]** ***Complete report of the Program by Dr. Vijay*** **Felicitation of Guests** **Address by Guest of Honor Prof. M.F. Wani, Director (I/c) & Dean R&C, NIT Srinagar** **Address by Chief Guest, Prof. Baldev Setia, Hon'ble Director, Punjab Engineering College, Chandigarh** *Feedback/ Farewell/Certificate Distribution* **Vote of Thanks by Dr. Harkirat Singh**

PARTICIPATING INSTITUTES

S. No.	State/Country	Institutes	No. of Registered Participants
1.	Jammu & Kashmir	University of Kashmir	02
		NIT Srinagar	02
		Central University of Kashmir	02
		Islamic University of Science and Technology	02
		Government College for Women, M.A. Road, Srinagar	02
2.	Alberta	University of Alberta	01
3.	Uttar Pradesh	Aligarh Muslim University	01
4.	New Delhi	National Physics Laboratory, Delhi	02
		Jawaharlal Nehru University	01
		Jamia Millia Islamia	01
		Indian Institute of Technology, Delhi	01
5.	Rajasthan	Manipal University Jaipur	01
		Malaviya National Institute of Technology Jaipur (MNIT)	01
6.	Madhya Pradesh	Medi-Caps University Indore	02
		APS University	01
7.	Tamil Nadu	Indian Institute of Technology, Madras	01
8.	Haryana	Krishna Metallurgical Laboratories Pvt. Ltd.	01
		J.C. Bose University of Science and Technology, YMCA	02
9.	Panjab	Lovely Professional University Jalandhar	02
10.	Chandigarh	D.A.V. College Chandigarh	01
11.	Taiwan	TIGP Nano Taiwan	01
TOTAL			**30**

PARTICIPATING INSTITUTES

University of Kashmir

NIT Srinagar

Central University of Kashmir

Islamic University of Science and Technology

Government College for Women

University of Alberta

Aligarh Muslin University

CSIR-NPL

JNU

Jamia Millia Islamia

IIT Delhi

Manipal University Jaipur

MNIT Jaipur

MEDI-CAPS

APS University

IIT Madras

Krishna Metallurgical Laboratories Pvt. Ltd.

J.C. Bose University of Science and Technology

Lovely Professional University Jalandhar

DAV College Chandigarh

TIGP Nano Taiwan

ORGANIZERS REPORT

Report on One Week Training Program
on
"Material Characterization Techniques"

28th June to 4th July 2022

Coordinators

Dr. Vijay Kumar, Dr. Mukund Dutt Sharma, Prof. Bhanu Prakash Singh

Convener

Dr. Mohd Zubair Ansari, Dr. Harkirat Singh

BACKGROUND

Departments of Physics and Mechanical Engineering Department of National Institute of Technology, Srinagar (J&K) in joint collaboration with the Department of Physics, Aligarh Muslim University, Aligarh has successfully organized One Week Training Program on Material Characterization Techniques under Synergistic Technological Training Program Utilizing the Scientific and Infrastructure (STUTI). The training program, which was sponsored by Department of Science & Technology, GoI was convened by Dr. Vijay Kumar, Dr. Mukund Dutt Sharma, Prof. Prof. Bhanu Prakash. Resource Persons for the training program were exceptionally experienced faculty members from reputed Indian Institutes. The content of the invited talks reflects the wide variety of sophisticated instruments such as SEM, XRD, Nanomechincal system, Multi-Target Sputtering system, WDXRF, Rheometer, Particle size analyzer, Axis Laser Texturing UV Visible, FTIR, Raman, TGA/DSC, etc. There were around 30 participants from India and abroad. The scientific sessions were highly useful for the budding researchers who participated in the training program. This training program was for a range of academics like faculties, scientists, Post-Doc Fellows, Ph.D. scholars and industrialists who are actively involved in R&D and seek knowledge of various characterization techniques. The course also stands to help researchers and students in the present state of the discipline.

WELCOME AND OPENING ADDRESSES

Dr. Vijay Kumar, Coordinator - STUTI Training Program, Assistant Professor, Department of Physics, NIT Srinagar (J&K) welcomed Chief Guest, Prof. Anil P. Kulkarni, Retired Principal, H.V. Desai College; Hon'ble Director, Prof Rakesh

Sehgal; Prof M.F Wani; Dean Research & Consultancy; Prof. S. K. Bhukhari, Registrar NIT Srinagar; Head of the Physics Department, Dr. M. A. Shah; Faculty members of the Physics Department and all the Participants.

Prof. Kulkarni, Chief Guest of the program urged students to focus on quality research and training programs to overcome the technological gap. The aim of NEP2020 is student development and will help the country in the long run to achieve quality research, he said. "India is still dependent on other countries for various technologies and we need to overcome this gap. Students, and researchers should take lead in

making country self-sufficient in modern technologies," Prof. Kulkarni said. He also congratulated Director NIT Prof. (Dr.) Rakesh Sehgal, Head Physics Dr. MA Shah, and Dr. Vijay Kumar, Dr. Mukund Dutt Sharma for organizing such training workshop for students.

Director NIT, Prof. (Dr.) Rakesh Sehgal said research and technology are need of the hour. We need to develop and test solutions; predict outcomes and mitigate harm and make informed policy decisions, he said. "Apart from having more than 400 research scholars on campus, we are trying to provide slots to other institutions as well, so that they will be also exposed to high-end equipment at NIT Srinagar," Prof. Sehgal said. "There is no dearth of talent in Jammu and Kashmir but there is a need to work in the right direction," he said.

Institute's Registrar, Prof. Syed Kaiser Bukhari said such programs would go a long way in developing our students, and research scholars. It would act as great significance to our R&D programs, he said. "We at NIT Srinagar across all departments have a growing R&D sector. With the help of such programs, we will be featured among top research institutes in the country," he said. Prof. Bukhari congratulated the Physics department for taking lead in initiating such programs. The role of Science and Technology is pivotal for the evolution of mankind, he said. “During the last four years, under the dynamic leadership of Prof. Rakesh Sehgal, NIT Srinagar is taking lead on all fronts by organizing various workshops, and international conferences. The NIRF ranking and perception level of the Institute has also improved,' he said. Dean Research and Consultancy, Prof. MF Wani, who was 'Guest of Honor', said NIT

Srinagar has developed state of the art for facilities for the research facilities and will continue to expand its activities. "We should have a scientific attitude towards the nature and essence of this program is to improve the teaching ability of the participants and enable learners to learn," he said.

Principal, N.S.C.B.M. Govt. College Hamirpur (HP), Dr. Anju Batta Sehgal appreciated the organizers for conducting workshops on a relevant theme. She urged participants to work take maximum benefits from such workshops and later disseminate the knowledge to others as well.

On the occasion, Dr. M Wassi Khan, STUTI Co-PI PMU Aligarh Muslim University said the program is designed for the participants of various institutes across the country. Prof. Khan said they will be given hands-on training on high-end sophisticated, analytical instrumentation in addition to expert lectures from the eminent scientists, he said. "The idea of STUTI is to impart hands-on training and access to science and technology infrastructure present with DST supported institutes. The participants will get a deeper insight about the high-end equipment," he said.

HOD Physics, Dr. M. A. Shah said Physics is taking a lead role in organizing scientific summits under the leadership of Prof. Sehgal and his team. We promise to continue it for the benefit of students and young faculty, he said. "We can't ignore to learn the operation of sophisticated equipment; we all witness they are an integral part of our new challenges. These initiatives will spread the spirit of the collaboration," he said. Addressing the gathering, HOD Mechanical Engineering Department, Prof. Nazir Ahmad Sheikh said technology is playing a vital role in the sphere and students,

research scholars should explore more areas. "Modern drones have replaced high-end fighter jets and we need to grow along with the changing technology. There is a need for such training programs in the future also," he said. A formal vote of thanks was delivered by the Coordinator, Dr. Mukund Dutt Sharma. He expressed his gratitude to Director NIT Srinagar, Prof. Sehgal, Prof. Anil P. Kulkarni, Registrar, Prof. Bukhari, Prof. MF Wani, Dr. Anju Batta Sehgal, Head Physics Dr. Shah, resource person, and participants for making the inaugural event a grand success.

One Week Training Program on Material Characterization Techniques under STUTI

NIT SRINAGAR

National Institute of Technology, Srinagar

Media Coverage

India needs quality research, training skills to overcome technological gap: Prof. Kulkarni

Week-long program on material characterization techniques begins at NIT Srinagar

India needs quality research, training skills to overcome technological gap: Prof. Kulkarni

Week-long prog on material characterization techniques begins at NIT Srinagar

Excelsior Correspondent

SRINAGAR, June 28: A week-long training program on material characterization techniques under the Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) began harm and make informed policy decisions. Apart from having more than 400 research scholars on campus, we are trying to provide slots to other institutions as well, so that they will be also exposed to high-end equipment at NIT Srinagar," Prof Sehgal said.

'ndia needs quality es earch, training skills to et ome technological gap'

Week-Long Program on Material Characterization Techniques Begins at NIT Srinagar

DAY 1

The first session of the training program started with the invited lecture by Dr. M. A. Shah, Department of Physics, NIT Srinagar. Dr. delivered an excellent talk on A revolution in photonic devices. The lecture covered the science of photonic devices and photonic materials. He stressed that the fundamental laws of physics dictate that photonic communications should eventually replace electronics. He talked about photonic devices can act as components for creating, manipulating, or detecting light.

In the post-lunch session, Dr. Aijaz Ahmad Dar Department of chemistry, University of Kashmir Srinagar, delivered an elaborative talk on Structure property relationship in molecular solids by using single crystal XRD. He discussed in details the

importance of single-crystal X-ray Diffraction and also provided information about the internal lattice of crystalline substances, including unit cell dimensions, bond-lengths, bond-angles, and details of site-ordering. He also explained the difference between the single crystal XRD and powder XRD.

In part of the training program, a Lab tour is one of the major events for the participants to give wider exposure to the various synthesis and characterization techniques available at the NIT Srinagar. During the training, participants had an opportunity to visit the Central Research Facility Lab labs at NIT Srinagar. All the participants were divided into four groups. The participants were given a brief demonstration of several characterization techniques like WDXRF, UV-Vis/TGA, Rehometer & Particle size analyzer, and Axis Laser Texturing. We are very much sure that this exposure to several characterizations is very much helpful for them to improve their knowledge and pursue their research with higher quality. The first day

of the training program was a great success and the organizers look forward to six more days to make this workshop a better platform for budding researchers to know about various characterization techniques.

DAY 2

The second day starts with the talk of Dr. M Wassi Khan, Department of Physics, Aligarh Muslim University Aligarh and discussed in detailed the Transmission Electron Microscopy. The talk also gave introduction to primitive microscope (optical based), its properties (optics) and limitations (in terms of poor resolution, brightness of the source, etc.) and then taken to the needs of higher end microscopy (electron based). For electron microscopy, fundamental of electron-matter interactions and generation of various rays are explained. This is followed by complete utilization of

scanning electron microscopy (SEM): starting from sample preparation, electron gun types, SEM scanning methods in terms of raster; signals generations and their capturing in terms of energy and placements with various examples (secondary electron imaging, backscatter electron imaging and diffraction, channeling contrast imaging, elemental analysis mapping through energy dispersive spectroscopy and wavelength dispersive spectroscopy, electron beam induced current). He further focused on the application of electron microscopy in characterizing biological and non-biological specimens and their use in various fields of science and technology. He also emphasized on the need of exploring electron microscopy techniques for materials science and nanotechnology as well as biomaterials. He also explained the difference between SEM and TEM in a very nice manner and by giving various examples.

The second talk of the day was delivered by Dr. Manzoor Ahmad Mir, Head, Bioresources, School of Biological Science, Kashmir University. He talked about Characterization of compounds from Medicinal plants through LCMS-HR for Breast

Cancer Treatment. It was a very informative talk. He mainly emphasized that how we characterize the nanomaterials extracted from plants and their uses for the detection and cure of breast cancer. He ended his talk with the challenges in the biomedical field and the requirement of advanced state-of-the-art characterization methodologies to develop an in-depth understanding, and approaches to overcome the challenges. Last session ended with the demo on X-ray Diffraction, Nanomechincal system, Multi Target Sputtering system and FESEM. Demonstration session were appreciated by all the participants.

DAY 3

The third day started with a talk by Dr. Harkirat Singh, Department of Physics, National Institute of Technology Srinagar on Low temperature and STM. He covered the very basics of magnetic materials and also presented research-level data in a very

down-to-earth manner and his lecture was enjoyed and liked by all the participants. A very interactive talk was delivered by Prof. M. F. Wani, Dean of Research & Consultancy, NIT Srinagar on New lubrication of mechanical systems – A path to sustainability. He emphasized on Tribology, Tribology of advanced ceramics & Nano Ceramics, and Life Cycle Engineering. He also shared his journey as a researcher with participants and how he managed to create a state-of-art-facility at NIT Srinagar. He motivated the participants and urged that to work hard to solve social problems. The third day again ended with a hands-on session. The participants were given demonstration cum hands-on experience on Nanomechincal system, Multi Target Sputtering system, FESEM and X-ray Diffraction.

DAY 4

The fourth day started with an invited talk of Prof. Rakesh Sehgal, Director, National Institute of Technology Srinagar. He talked about nanotechnology to engineer biomedical materials for tissue repair and regeneration. He talked about biomaterials for orthopedic/dental devices and discussed common clinical challenges, bacterial infection and poor osseointegration in detail. Bio-inspired multi-bio functional biomaterials along with the preparation of 3D porous scaffolds was quite interesting. He also covered state and art facilities available at NIT Srinagar. He encouraged all the participants for future collaboration. The next lecture was delivered by Dr. Monika Koul on Fluorescence microscopy and atomic absorption spectrophotometery in multidisciplinary research. She explained the working and principle of both the techniques in a very nice manner. The talk also shows how to extract quantitative information from these techniques. Finally, cutting edge applications of these techniques is also highlighted.


MULTI TARGET SPUTTERING SYSTEM

DAY 5

The fifth day started with an invited lecture by Dr. Jigneshkumar V. Rohit, Department of Chemistry, NIT Srinagar's. He talked about Use of nanomaterials in spectroscopic analysis. Spectroscopy techniques are a vital part of the characterization of nanomaterials, as well as other materials and molecules. He elaborated UV visible spectroscopic technique for nano material characterizations. various areas of forensic science and their scopes. Next talk of the training program on fifth day was delivered by Dr. Mohd Nadeem Bhat, NIT Srinagar. He talked on Multiscale structural characterization of Metallic Materials. All the participants have shown their satisfaction in respect of the content, delivery, and presentations of all the topics covered during the presentation.

DAY 6

The sixth day started with an invited lecture by Dr. Rajendra S. Dhaka, Chair, Indian National Young Academy of Science & Associate Professor, Department of Physics, Indian Institute of Technology Delhi. He delivered a talk on photoelectron Spectroscopy: A tool to study electronic structure of materials. He stressed that a special method of surface characterization based on the photoelectric effect is photoelectron spectroscopy (PS). He explained very nicely that how the sample is illuminated by either a monochromatic ultraviolet (UV) or x-ray beam, and the kinetic energy of the photo electrons that are released is measured. It is referred to as UPS when a UV source is used, and as XPS when an X-ray source is used. In both situations, calculating the binding energy of a specific photoelectron is made easier by studying the kinetic energy of the photoelectron for a known incident energy beam. He emphasized how the probe energy provided by XPS was used to examine the core level spectra of distinct atoms. In addition, he demonstrated how interfacial layers, molecular orbital energy, semiconductor and heterojunction valence band spectra, and more could all be studied. As a model system, the specifics of how the binding energy changed in relation to the chemical environment of the silicon atom were elucidated. It was a very interactive session.

Dr. Jagdish Kumar, School of Physical and Material Sciences, Central University of Himachal Pradesh delivered a talk the quantum foundation for material characterization using density functional theory. He presented a very well-written explanation of how the electronic structure of atoms, molecules, and solids is calculated in chemistry and physics using the density functional theory. Dr. Jagdish also gave a hands-on session on computing ground state energy, lattice parameters, electronic band structure and density of states for crystals using density functional theory. Another demo session was given on exploring magnetism, lattice vibrations, thermal and superconducting properties using DFT. The session ended with a doubts cum discussion session with participants.

DAY 7

The first talk of the las day of training program was delivered by Dr. Jagdish Kumar, School of Physical and Material Sciences, Central University of Himachal Pradesh. He talked on the quantum foundation for material characterization using density functional theory. Last talk of the training program was delivered Dr. Anurag Gaur, Department of Physics, J.C Bose University of Science & Technology, YMCA, Faridabad on Scanning Electron Microscopy (SEM). He talked about how SEM has a long history of being an effective and helpful tool for life science research on a wide range of samples, including insects, tissues, organoids, cells, plants and materials. His presentation gave a basic overview of how SEM technology operates, the kinds of applications that can be handled utilizing SEM techniques, and the difficulties that may restrict the quality of the images produced. All the participants have shown their satisfaction in respect of the content, delivery, and presentations of all the topics covered during the training program.

VALDICTORY SESSION

Valedictory Program [Monday, July 04, 2022 @ 2:30 PM - 3:30 PM]	
Time (IST)	**Event**
02:30PM – 02:35PM	Complete report of the Program by Dr. Vijay Kumar
02:35PM – 02:40PM	Felicitation of Guests
02:40PM – 02:45PM	Welcome Address by HOD Physics Dr. M. A. Shah
02:45PM – 02:50PM	Address by Guest of Honor Prof. S. K. Bukhari, Hon'ble Registrar, NIT Srinagar
02:50PM – 02:55PM	Address by Guest of Honor Prof. M.F. Wani, Dean R&C, NIT Srinagar
02:55PM – 03:00PM	Address by Special Guest Prof. Saraswati Setia
03:00PM – 03:10PM	Feedback by Participants
03:10PM – 03:20PM	Address by Chief Guest Prof. Baldev Setia, Hon'ble Director, Punjab Engineering College, Chandigarh
03:20PM – 03:30PM	Certificate Distribution by Hon'ble Guests
03:30PM – 03:40PM	Vote of Thanks
03:40PM –	High Tea

The aim of training program was to spread the knowledge or share resources. The weeklong training program on Material Characterization Techniques under the Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) concluded on 4th July 2022 at National Institute of Technology (NIT) Srinagar. The workshop was organized by the Department of Physics and Mechanical Engineering Department of NIT Srinagar in joint collaboration with Department of Physics, Aligarh Muslim University, Aligarh (UP). The training program was sponsored by the Department of Science & Technology. The valedictory program was presided over by Prof. Baldev Setia, Director, Punjab Engineering College, Chandigarh, who was also chief guest in the event, and Prof. M.F. Wani, Dean R&C, NIT Srinagar was the Guest of Honor in the session. In his key speech, Prof. Baldev Setia said both faculty development programs (FDP)'s and training workshops are need of the hour. They have multiple benefits and are important for achieving for long-term goals of New Education Policy 2020. While highlighting the importance of collaborations, he said such facilities are need of the hour and we should take more benefits from such initiatives. Prof. Setia urged young scholars to serve society by innovations that will help common people. There is need to add emotions and spirituality to new inventions so that more people will get benefitted, he said. In-charge Director and Dean Research and Consultancy, NIT Srinagar, Prof. Wani said conducting workshops on relevant themes is the need of the hour. NIT Srinagar will act as a platform for providing relevant knowledge to people who are involved in research activities, he said. He said high-end equipment should be more used for humanity. Developing small materials can be more helpful to society compared to writing papers on the same subject, he said. "We should replace conventional material and development eco-friendly material. It will be our biggest contribution to our society," he said. On the occasion, Prof. Saraswati Setia, who was a special guest at the event said there is a need to explore areas of innovations in solid waste management. Plastic waste has a very huge impact on our environment and urged young participants to explore alternatives for the same, she said. Former Dean Research and Consultancy NIT Srinagar, Prof. G.A. Harmain laid emphasis on the importance of material sciences and their relevance in modern technology. "Materials science and engineering drive innovation in the research and industry. It is fundamental to all other science and engineering disciplines," he said. Head Physics, Dr. MA Shah said over the past several years, NIT Srinagar has developed state of the

art for facilities for research facilities and will continue to expand its activities. "We can't ignore to learn the operation of sophisticated equipment; we all witness they are an integral part of our new challenges. These initiatives will spread the spirit of the collaboration," he said. In his message, Prof. B. P. Singh, Head, Physics and STUTI Coordinator - PMU AMU, Aligarh also appreciated Dr. Vijay Kumar for the grand success of the program. Program Coordinator Dr. Vijay Kumar presented a detailed report of the 7-day STUTI training program. He said a total of 35 delegates were participated in the workshops representing 21 institutes and universities across the country. He thanked AMU, Aligarh and the Department of Science & Technology Government of India for sponsoring the 7-day STUTI workshop at NIT Srinagar. A formal vote of thanks was presented by Dr. Harkirat Singh. He expressed his gratitude to the Chief guests, experts, AMU and DST and all participants, for making the workshop successful.

One Week Training Program on Material Characterization Techniques under STUTI

PLAN

Encouraged by the response and feedback received from the participants, we would like to continue conducting such type of training programs with further improvements in near future. Their feedback motivates us to come with similar initiative in future.

ACKNOWLEDGEMENTS

The Department of Science and Technology (DST) New Delhi has sanctioned a project under Synergistic Training Program Utilizing the Scientific & Technological Infrastructure (STUTI) program to Aligarh Muslim University, Aligarh. The Programme is supported on a Hub and Spoke model and the National Institute of Technology Srinagar is chosen as a Spoke institute under the Programme by Prof. B. P. Singh. Special thanks goes to Aligarh Muslim University. We would also like to thank DST for liberal funding. Support from departmental Ph.D. students is highly appreciated. The CRFC team along with departmental research scholars were very instrumental in facilitating program. This training program would not have been successful without their constant and active support. This also motivates us to conduct more program in the near future. The presence of the Honorable Director, despite his extremely busy schedule, is a reflection his commitment in the growth of the institute. We also acknowledge Prof. M. F. Wani, Head, CRFC, and his office for the smooth conduct and his support in every matter of the training program along with the access to central facilities. Any academic function in the department cannot be organized without the support of the student volunteers. Thank you, dear students, for your contributions and enthusiasm in each and every aspect of the event. Last but not least thank you all administrative and support staff and everyone who has contributed to making this training program a grand success.

OUTCOME

This course received an awesome response from institutes/universities of J&K and neighboring states. Teachers and students from different field of interest including physics, chemistry, food technology, material science, nanotechnology, mechanical, and chemical engineering registered in this course. The course inspired participants to boost their research by introducing various information about recent advances in nanoscience and nanotechnology along with advancements in various characterization techniques and gave them an idea of what more can be done/needs to be done to

further improve their research work. The invited lectures gave participants a deeper learning experience in this training program. Participants were introduced to various synthesis and characterization techniques available in the NIT campus.

FEEDBACK

The course was well-received by the participants as clear from the feedback received through the Feedback form filled by the participants.

NEWS COVERAGE

ilyGreaterKashmir twitter.com/GreaterKashmir

'India needs quality research, training skills to overcome technological gap'

GK NEWS NETWORK

Srinagar, June 28: A week-long training program on material characterisation techniques under the Synergistic Training Programme utilizing the Scientific and Technological Infrastructure (STUTI) began on Tuesday at National Institute of Technology.

The workshop is being organised by Departments of Physics and Mechanical Engineering Department of NIT, Srinagar in joint collaboration with Department of Physics, Aligarh Muslim University, Aligarh. It is sponsored by the Department of Science & Technology. The event was presided over by Director NIT Srinagar, Prof. (Dr.) Rakesh Sehgal and Prof. Anil P. Kulkarni, Retired Principal, H.V. Desai College, Pune was the chief guest during the inaugural session. In his key speech, Prof. Kulkarni urged students to focus on quality research and training programs to overcome the technological gap. The aim of NEP2020 is student development and will help the country in the long run to achieve quality research, he said.

"India is still dependent on other countries for various technologies and we need to overcome this gap. Students and researchers should take lead in making the country self-sufficient in modern technologies," Prof. Kulkarni said.

He also congratulated Director NIT Prof. (Dr.) Rakesh Sehgal, Head Physics Dr. MA Shah, and Dr. Vijay Kumar, Dr. Mukund Dutt Sharma for organizing such training workshop for students.

Director NIT, Prof. (Dr.) Rakesh Sehgal said research and technology are need of the hour. We need to develop and test solutions; predict outcomes and mitigate harm and make informed policy decisions, he said.

"Apart from having more than 400 research scholars on campus, we are trying to provide slots to other institutions as well, so that they will also be exposed to high-end equipment at NIT Srinagar," Prof. Sehgal said.

"There is no dearth of talent in Jammu and Kashmir but there is a need to work in the right direction," he said.

NIT Srinagar hosts workshop in collaboration with AMU

BK News Service

Srinagar, June 28, 2022: The week-long training program on material characterization techniques under the Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI) began on Tuesday at National Institute of Technology.

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Institute's Registrar, Prof. Syed Kaiser Bukhari said such programs would go a long way in developing our students, and research scholars. It would act as great significance to our R&D programs, he said.

3 Mountain Valley Kashmir SRINAGAR WEDNESDAY | 29 JUNE 2022 NEWS

India needs quality research, training skills to overcome technological gap: Prof. Kulkarni

Week-long program on material characterization techniques begins at NIT Srinagar

SRINAGAR, JUNE 28, 2022: The week-long training program on material characterization techniques under the Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI) began on Tuesday at National Institute of Technology.

The workshop is being organized by Departments of Physics and Mechanical Engineering Department of NIT, Srinagar in joint collaboration with Department of Physics, Aligarh Muslim University, Aligarh. It is sponsored by the Department of Science & Technology.

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Institute's Registrar, Prof. Syed Kaiser Bukhari said such programs would go a long way in developing our students, and research scholars. It would act as great significance to our R&D programs, he said.

"We at NIT Srinagar across all departments have a growing R&D sector. With the help of such programs, we will be soon featured among top research institutes in the country," he said.

Prof. Bukhari congratulated the Physics and Mechanical Engineering departments for taking lead in initiating such program on campus. The role of Science and Technology is pivotal for the evolution of mankind, he said.

"During the last four years, under the dynamic leadership of Prof Rakesh Sehgal, NIT Srinagar is taking lead on all fronts by organizing various workshops, and international conferences. The NIRF ranking and perception level of the Institute has also improved," he said.

Dean Research and Consultancy, Prof. MF Wani, who was 'Guest of Honor', said NIT Srinagar has developed state of the art facilities for the research facilities and will continue to expand its activities.

"We should have a scientific attitude towards the nature and essence of this program is to improve the teaching ability of the participants and enable learners to learn," he said.

Principal, N.S.C.B.M. Govt. College Hamirpur (HP), Dr. Anju Batta Sehgal appreciated the organizers for conducting workshops on a relevant theme.

She urged participants to work take maximum benefits from such workshops and later disseminate the knowledge to others as well.

On the occasion, Dr. M Wasi-ul Khan, STUTI Co-PI PMU Aligarh Muslim University said the program is designed for the participants of various institutes across the country.

Prof. Khan said they will be given hands-on training on high-end sophisticated, analytical instrumentation in addition to expert lectures from the eminent scientists, he said.

"The idea of STUTI is to impart hands-on training and access to science and technology infrastructure present with DST supported institutes. The participants will get a deeper insight about the high-end equipment," he said.

HOD Physics, Dr. M. A. Shah said Physics is taking a lead role in organizing scientific summits under the leadership of Prof. Sehgal and his team. We promise to continue it for the benefit of students and young faculty, he said.

"We can't ignore to learn the operation of sophisticated equipment, we all witness they are an integral part of our new challenges. These initiatives will spread the spirit of the collaborations," he said.

Addressing the gathering, HOD Mechanical Engineering Department, Prof. Nazir Ahmad Sheikh said technology is playing a vital role in the sphere, and students, research scholars should explore more areas.

"Modern drones have replaced high-end fighter jets and we need to grow along with the changing technology. There is a need for such training programs in the future also," he said.

Earlier, Program Coordinator Dr. Vijay Kumar presented a detailed report of the 7-day STUTI training program. He said a total of 35 delegates are participating in the workshops representing 22 institutes and universities across the country.

"Eminent speakers will be delivering the lectures during the training program to impart participants with the basic knowledge and skills regarding the latest technologies," he said.

In his message, Prof. R. P. Singh, Head, Physics STUTI Coordinator - PMU AMU, Aligarh also appreciated Dr. Vijay Kumar for the grand success of the program.

A formal vote of thanks was delivered by the Coordinator, Dr. Mukund Dutt Sharma. He expressed his gratitude to Director NIT Srinagar, Prof. Sehgal, Prof. Anil P. Kulkarni, Registrar, Prof. Bukhari, Prof. MF Wani, Dr. Anju Batta Sehgal, Head Physics Dr. Shah, resource person, and participants for making the inaugural event a grand success.

India needs quality research, training skills to overcome technological gap: Prof. Kulkarni

Week-long program on material characterization techniques begins at *NIT Srinagar*

SO NEWS DESK

SRINAGAR - The week-long training program on material characterization techniques under the Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI) began on Tuesday at National Institute of Technology.

The workshop is being organized by Departments of Physics and Mechanical Engineering Department of NIT, Srinagar in joint collaboration with Department of Physics, Aligarh Muslim University, Aligarh. It is sponsored by the Department of Science & Technology.

The event was presided over by Director NIT Srinagar, Prof. (Dr.) Rakesh Sehgal and Prof. Anil P. Kulkarni, Retired Principal, H.V. Desai College, Pune was the chief guest during the inaugural session.

In his key speech, Prof. Kulkarni urged students to focus on quality research and training programs to overcome the technological gap. 'The aim of NEP2020 is student development and will help the country in the long run to achieve quality research, he said.

"India is still dependent on other countries for various technologies and we need to overcome this gap. Students and researchers should take lead in making the country self-sufficient in modern technologies," Prof. Kulkarni said.

He also congratulated Director NIT Prof. (Dr.) Rakesh Sehgal, Head Physics Dr. MA Shah, and Dr. Vijay Kumar, Dr. Mukund Dutt Sharma for organizing such training workshop for students.

Director NIT, Prof. (Dr.) Rakesh Sehgal said research and technology are need of the hour. We need to develop and test solutions; predict outcomes and mitigate harm and make informed policy decisions, he said.

"Apart from having more than 400 research scholars on campus, we are trying to provide slots to other institutions as well, so that they will be also exposed to high-end equipment at NIT Srinagar," Prof. Sehgal said.

"There is no dearth of talent in Jammu and Kashmir but there is a need to work in the right direction," he said.

Institute's Registrar, Prof. Syed Kaiser Bukhari said such programs would go a long way in developing our students, and research scholars. It would act as great significance to our R&D programs, he said.

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She urged participants to work take maximum benefits from such workshops and later disseminate the knowledge to others as well. On the occasion, Dr. M Wasi Khan, STUTI Co-PI PMU Aligarh Muslim University said the program is designed for the participants of various institutes across the country.

Prof. Khan said they will be given hands-on training on high-end sophisticated, analytical instrumentation in addition to expert lectures from the eminent scientists, he said.

"The idea of STUTI is to impart hands-on training and access to science and technology infrastructure present with DST supported institutes. The participants will get a deeper insight about the high-end equipment," he said. HOD Physics, Dr. M. A. Shah said Physics is taking a lead role in organizing scientific summits under the leadership of Prof. Sehgal and his team. We promise to continue it for the benefit of students and young faculty, he said.

"We can't ignore to learn the operation of sophisticated equipment, we all witness they are an integral part of our new challenges. These initiatives will spread the spirit of the collaboration," he said. Addressing the gathering, HOD Mechanical Engineering Department, Prof. Nazir Ahmad Sheikh said technology is playing a vital role in the sphere, and students, research scholars should explore more areas.

"Modern drones have replaced high-end fighter jets and we need to grow along with the changing technology. There is a need for such training programs in the future also," he said. Earlier, Program Coordinator Dr. Vijay Kumar presented a detailed report of the 7-day STUTI training program. He said a total of 35 delegates are participating in the workshops representing 22 institutes and universities across the country.

Week-long program on material characterization techniques begins at NIT Srinagar

STUTI Workshop on Material Characterization Techniques concludes at NIT Srinagar

Program was to spread the knowledge and share resources: Prof. Baldev Setia

Srinagar, July 04: The weeklong training program on Material Characterization Techniques under the Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) concluded on Monday at the National Institute of Technology (NIT) Srinagar.

The workshop was organized by P G Department of Physics and Mechanical Engineering Department of NIT Srinagar in collaboration with the Department of Physics, Aligarh Muslim University, Aligarh (UP) and sponsored by the Department of Science & Technology (GOI).

The valedictory program was presided over by Prof. Baldev Setia, Director, Punjab Engineering College, Chandigarh, who was also chief guest in the event and Prof. M.F. Wani, Dean R&C, NIT Srinagar was the Guest of Honor in the session. In his key speech, Prof. Baldev Setia said both faculty development programs (FDP)'s and training workshops are the need of the hour. They have multiple benefits and are important for achieving the long-term goals of the New Education Policy 2020. While highlighting the importance of institution collaborations, he said such facilities are vital and we should take maximum benefits of such initiatives.

Prof. Setia urged young scholars to serve society through innovations. There is a need to add emotions

and spirituality to new inventions so that more people will get benefitted, he said.

In-charge Director and Dean Research and Consultancy, NIT Srinagar, Prof. Wani said conducting workshops on relevant themes is important. NIT Srinagar will act as a platform for providing relevant knowledge to people who are involved in research activities, he said. High-end equipment should be more used for humanity rather than for destructive activities. Developing small materials can be more helpful to society compared to writing papers on the same subjects, he said. "We should replace conventional materials and development eco-friendly materials. It will be our biggest contribution to our society," he said.

In his message, Director NIT Srinagar, Prof. (Dr.) Rakesh Segal said the workshop served participants in multiple ways so that they were able to share their knowledge and experience. "It was a successful program which was conducted nicely. All the participants have gained a lot from this workshop, which was the purpose of the program to spread the knowledge or share the resources," he said.

Institute's Registrar, Prof. Syed Kaiser Bukhari said all sessions of the workshop were an eye-opener for all participants. "NIT Srinagar will be organizing such workshops in the future also so that students can get benefit from these initiatives, he said.

On the occasion, Prof. Saraswati Setia, who was a special guest at the event said there is a need to explore areas of innovations in solid waste management. "Plastic waste has a very huge impact on our environment and urged young participants to explore alternatives for the same, "she said.

Former Dean R&C, NIT Srinagar, Prof. G.A. Harmain emphasized the importance of material sciences and their relevance in modern technology." Materials science and engineering drive innovation in the research and industry. It is fundamental to all other science and engineering disciplines," he said. Dr Hamida-Tun-Nisa Chishti from Chemistry Department encouraged the young researchers for participating in more such workshops. Both Prof Harmain and Dr (Mrs) Chasti, being inducted as BOG Members recently were felicitated on the occasion.

STUTI Workshop on Material Characterization Techniques concludes at NIT Srinagar

Program was to spread the knowledge and share resources: Prof. Baldev Setia

New inducted BOG were felicitated by HOD Physics

LADAKH IMAGES NEWS

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Before, valedictory a quick test was conducted by Mr Tawahaj and top 10 were felicitated by Dr Shah M A, Head Physics.

A formal vote of thanks was presented by Dr. Harkirat Singh. He expressed his gratitude to the Chief guests, experts, AMU and IST and all participants, for making the workshop successful. The programme was coordinated by a band of scholars, who voluntarily worked for 7 consecutive days.

'Material Characterization Techniques': STUTI Workshop concludes at NIT Srinagar

Monitor News Bureau

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In his message, Director NIT Srinagar, Prof. (Dr.) Rakesh Segal said the workshop served participants in multiple ways so that they were able to share their knowledge and experience. "It was a successful program which was conducted nicely. All the participants have gained a lot from this workshop, which was the purpose of the program to spread the knowledge or share the resources," he said.

Institute's Registrar, Prof. Syed Kaiser Bukhari said all sessions of the workshop were an eye-opener for all participants. "NIT Srinagar will be organizing such workshops in the future also so that students can get benefit from these initiatives, he said.

On the occasion, Prof. Saraswati Setia, who was a special guest in the event said there is a need to explore areas of innovations in solid waste management. "Plastic waste has a very huge impact on our environment and urged young participants to explore alternatives for the same, "she said.

Former Dean R&C, NIT Srinagar, Prof. G.A. Harmain emphasized on the importance of material sciences and their relevance in modern technology" Materials science and engineering drive innovation in the research and industry. It is fundamental to all other science and engineering disciplines," he said.

Dr. Hamida-Tun-Nisa Chishti from Chemistry Department encouraged the young researchers for participating in more such workshops. Both Prof Harmain and Dr (Mrs) Chisti, being inducted as BOG Members recently were felicitated on the occasion.

Head Physics, Dr. MA Shah said over the past several years, NIT Srinagar has developed state of the art for facilities for research facilities and will continue to expand its activities. "We can't ignore to learn the operation of sophisticated equipment; we all witness they are an integral part of our new challenges. These initiatives will spread the spirit of the collaboration," he said.

In his message, Prof. B. P. Singh, Head, Physics and STUTI Coordinator - PMU AMU, Aligarh also appreciated Dr. Vijay Kumar for the grand success of the program. Their representative Dr. Wasi Khan attended many sessions and was praiseworthy for management.

Program Coordinators Dr. Vijay Kumar and Dr. Mukund Dutt Sharma presented a detailed report of the 7-day STUTI training program. He said a total of 35 delegates participated in the workshops representing 22 institutes and universities across the country. He thanked AMU, Aligarh, and the Department of Science & Technology Government of India for sponsoring the 7-day STUTI workshop at NIT Srinagar.

A formal vote of thanks was presented by Dr. Harkirat Singh. He expressed his gratitude to the Chief guests, experts, AMU and DST, and all participants, for making the workshop successful. The program was coordinated by a band of scholars, who voluntarily worked for 7 consecutive days.

THANK YOU.

With regards

(Dr. Vijay Kumar) **(Mukund Dutt Sharma)** **(Prof. B. P. Singh)**
Coordinator(s)