

**International Conference
on
Current Trends in Functional Materials
and Applications (CTFMA-2024)**

25th -27th March 2024

Organized by

Department of Physics,



Akal University, Talwandi Sabo, India

In association with



Eternal University, Baru Sahib, HP

CHIEF PATRON

H.E. Baba (Dr.) Davinder Singh Ji
Chancellor, Akal University

Co-PATRON

Prof. Gurmail Singh Ji, Vice-Chancellor, AU

CONVENORS

Dr. Rajan Saini, Department of Physics, AU
Dr. Sushil Kumar, Department of Physics, AU

CO-CONVENOR

Dr. Ramandeep Kaur, Department of Physics, AU

ORGANIZING SECRETARIES

Dr. Janpreet Singh, Department of Physics, AU
Dr. Puneet Negi, Department of Physics, EU

KEY NOTE SPEAKERS

Prof. Daniel Neuville (Senior Director Research)
IPGP-CNRS, Paris, France
Prof. Ashutosh Goel, Professor, Rutgers, The State
University of New Jersey, USA
Prof. R.K. Kotnala, National Physical Lab, IN

**DISTINGUISHED INVITED SPEAKERS
International**

Prof. Mohamed NaJi, USMBA, Morocco
Dr. G.S. Selopal, Dalhousie University, Canada
Dr. Baldeep Kaur, University of Greenwich, UK.
Dr. Nirav Joshi, ICN2, Barcelona, Spain
Dr. Kulwinder Kaur, RCSI University, Ireland
Dr. D. Pathak, University of West Indies, WI

National

Prof. G.D. Verma, IIT, Roorkee
Prof. Anirban Chakraborti, JNU, IN
Prof. R. M. Yadav, Allahabad University, IN
Prof. R.P. Chauhan, NIT, Kurukshetra, IN
Prof. S.K. Tripathi, Panjab University, IN
Prof. Tulika Maitra, IIT, Roorkee, IN
Prof. S.K. Mahapatra, CU, Punjab, IN
Dr. Amrith Panwar, DTU Delhi, IN
Prof. Kamlesh Yadav, Allahabad University, IN
Dr. T. P. Yadav, Allahabad University, IN
Dr. M. Kumar Singh, Allahabad University, IN
Dr. Pabitra Nayak, TIFR, Hyderabad, IN
Dr. Vinod Ashokan, NIT, Jalandhar, IN
Dr. Saurabh Kapoor, Sterlite Technologies, IN
Dr. Anurag Gaur, NSUT, Dwarka, New Delhi, IN
Dr. Poorva Singh, VNIT, Nagpur, India
Dr. Shammi Verma, Semi-Conductor Lab, IN
Prof. Manish Kumar, JNU, IN
Dr. Poonam Uniyal, Thapar University, Patiala
Dr. Ashok Kumar, CPU, Bathinda, India

ADVISORY COMMITTEE

Prof. W. Sampson, University of Manchester, UK
Prof. Ashutosh Goel, Rutgers, USA
Prof. Ranjan Kumar, King Abdullah, South Africa
Prof. Mattei Giovanni, University of Padua, Italy
Prof. Salasnich Luca, University of Padua, Italy
Prof. R.K. Kotnala, National Physical Lab, IN
Prof. Tashi Nautiyal, IIT, Roorkee, India
Prof. R.K. Modgiol, KUK, Haryana, India
Prof. Devinder Kaur, IIT Roorkee, India
Prof. Kedar Singh, JNU, India
Prof. Kamlesh Yadav, Allahabad University, India
Prof. Manish Kumar, JNU, IN
Dr. Anurag Gaur, NSUT, Dwarka, New Delhi, IN
Dr. Pooran Singh, VNIT, Nagpur, India
Dr. Prashant S., CPU, Bathinda, India
Dr. Ashok Kumar, CPU, Bathinda, India
Prof. K.L. Yadav, IIT Roorkee, India
Prof. G.D. Verma, IIT, Roorkee
Prof. Anirban Chakraborti, JNU, IN
Dr. Ambuj Tripathi, IUAC, New Delhi
Dr. Faur Singh, IUAC, New Delhi
Dr. Amrith Panwar, DTU Delhi, IN
Prof. R.P. Chauhan, NIT, Kurukshetra, IN
Prof. R. M. Yadav, Allahabad University, IN
Dr. T. P. Yadav, Allahabad University, IN

LOCAL ADVISORY COMMITTEE

Maj. Gen. (Dr.) G. S. Lamba (DAA, AU)
Prof. Sukhjeet Singh, Registrar, AU
Prof. P.S. Cheema, (COE, AU)
Dr. Sandeep Singh (DSW, AU)
Dr. Bubun Banerjee, Coordinator, Green
Chemistry Network Center Chapter, AU)

ORGANIZING COMMITTEE

Dr. A.Sharma, Department of Physics, Physics, AU
Dr. Poonam Kumari, Department of Physics, EU
Mr. Jagtar Singh, Department of Physics, AU
Ms. Pinky, Department of Physics, Physics, AU
Ms. M. Kaur, RS, Department of Physics, AU
Ms. Navjot Kaur, RS, Department of Physics, AU

AIM AND SCOPE OF CONFERENCE

The proposed international conference shall provide a platform for scientists, young researchers, academicians, and industrial R&D personals worldwide to share current scientific developments. The present conference has been proposed to discuss and resolve the real-time challenges in the designing and application of functional materials. The conference will revolve around the experimental and theoretical aspects of functional materials. The broad areas to be covered in the conference will be:

- Hydrogen generation and Storage
- Renewable Energy
- Photovoltaic and Thermovoltaic Materials
- Sensors and Actuators
- Superconductivity
- Spintronics
- Functional 2D materials and applications
- Sensing devices
- Polymers and composites
- Magnetic Materials and Phenomenon
- Battery Materials
- Supercapacitors
- Hydrogen Storage Materials
- Advanced Electrode Materials
- Optoelectronic Materials
- Glasses, Ceramics, Polymers and Composites
- Biophysics and Biomaterials
- Computational Physics and Modelling
- Advanced Nanomaterials
- Electronic and photonic materials
- Sensing devices

The conference shall be organized during March 25-27, 2024 in hybrid mode at Akal University, Talwandi Sabo, Punjab, India.

ABOUT THE KALGIDHAR SOCIETY

Founded in 1956, The Kalgidhar Society – Baru Sahib has been working tirelessly towards transforming the lives of rural children through the tool of Value-Based Education. At the same time, Society has placed equal focus on empowering women, providing health care and ensuring social welfare for the vulnerable people in society. With the firm belief that everyone deserves to lead a life of dignity, each initiative of The Kalgidhar Society is embedded in the core thought of 'Bringing Grace to the Human Race'. The Kalgidhar Society initiated its work to bring back the glory of Punjab which is free of drug and alcohol abuse through the tool of education rooted in values. In its quest of fighting drugs with books, the Society has established 129 low-cost CBSE schools and 2 universities. The Kalgidhar Society under its flagship Akal Academies program, is providing modern, value-based education to nearly 70,000 students across rural areas of Punjab, Haryana, Himachal Pradesh, Rajasthan and Uttar Pradesh. Extending a helping hand to all those in need and giving them an opportunity to lead a decent life, the Kalgidhar Society has established teacher training centers, a multi-specialty hospital, drug de-addiction centers, an orphanage, one old age home, and a Center for Distressed Women.

Disclaimer: The Kalgidhar Trust and the Kalgidhar Society under Baru Sahib are two separate entities with distinct legal structures and operational autonomy. The Kalgidhar Trust is a registered trust established under the Indian Trusts Act, 1882, and is responsible for managing the financial resources and assets of the Baru Sahib campus, including educational institutions, healthcare facilities, and community development initiatives. The Kalgidhar Society under Baru Sahib is a registered society under the Societies Registration Act, 1860, and is responsible for the day-to-day operations and management of the educational institutions under its umbrella.

ABOUT THE AKAL UNIVERSITY

Established under the Punjab Government Act No. 25 (2015) and approved under the Section 2(f) of UGC Act (1956) to confer degrees. Akal University has a mission and vision to establish permanent peace in the world through value based scientific education and spiritual rejuvenation creating good global citizens. With blessings from Sant Baba Attar Singh Ji Maharaj, the establishment of Akal University under the leadership of H.E.(Late) Padma Shri Baba Iqbal Singh Ji by the Kalgidhar Trust (Baru Sahib) is culmination of what the Tenth Sikh Guru, Guru Gobind Singh Ji, prophesied about three centuries ago. Akal University has been mandated to carry out activities pertaining to the three basic principles of higher education: Teaching, Learning and Research. The University is successfully running UG (Honours), PG (Honours) and PhD programs Mathematics, Physics, Chemistry, Botany, Zoology, English, Punjabi, Psychology, Commerce, Economics, Social sciences, and UG in Sri Guru Granth Sahib Studies. The university has a firm resolve to provide a drug-free environment and to create a disciplined campus. A magnificent building with ultra-modern facilities for teaching and research is the hallmark of the University.

ABOUT DEPARTMENT OF PHYSICS, AU

The Department of Physics is established with a vision to provide world class education to the UG and PG students. Presently, the department offers two year M.Sc. & three year B.Sc. (Hons.) degree in Physics. The Department of Physics also offers Ph.D. programme in various research areas of experimental and Theoretical Physics. Department has highly competent and dedicated faculty members with diversity of research interests. Our research spans over theoretical and experimental Condensed Matter Physics, Radiation Physics, High Energy Physics and theoretical Nuclear Structure Physics.

ABOUT THE ETERNAL UNIVERSITY

Eternal university is NAAC Accredited & ISO 9001: 2015 Certified University established under the Himachal Pradesh Private University (Establishment & Regulation) Act 2006 & Himachal Pradesh Government Act. no. 3 of 2009, with the right to confer degree as per the UGC public notice on private Universities dated April 18, 2011. Eternal University with its seven constituent colleges is unique in imparting value based education to girl students and is the first private university of Himachal Pradesh to start College of Nursing, School of Public Health and College of Agriculture. Among several previous recognitions the Eternal University has been recently recognized as "The 20th Best Higher Education Institution in India, 2019 which are providing a broader perspective and cutting edge higher education with a focal point on fostering skills and innovation" by EDUCATION BRAINIAC magazine. It is continuously looking forward to take up research in the thrust areas and research gaps in Agriculture, Food Technology, Biotechnology, Public Health, Basic Sciences, Engineering & Technology and Renewable Energy with the teams of world class scientists, in-house and external funding support from different national and state funding agencies.

ABOUT DEPARTMENT OF PHYSICS, EU

The Department of Physics is offering various undergraduate and postgraduate course PhD programs. We are extensively involved in developing eco-friendly nanomaterials, ceramics and composites in materials science & nanotechnology laboratory. Till date, the laboratory has credit of synthesizing pure and doped wide band gap semiconductor nanomaterials like ZnO, TiO₂, metallic nano-particles; pure and doped nano-ferrites, nano-crystals using chemical sol-gel, co-precipitation and hydrothermal techniques along with characterizing/analyzing them for various applications.

CALL FOR PAPERS

All the manuscripts will be peer reviewed as per Journal's/Proceeding policies and Editorial decision will be final. Conference souvenir will only include the accepted abstracts. Presenters need to present their work to get the conference presentation certificates. Only the accepted full papers (reviews/original research articles) will be published as a special issue in a SCI Journal or in a SCOPUS, WOS indexed conference Proceeding.

ORAL/POSTER PRESENTATION

UG/PG students can compete for category-1, research associates/scholars can compete for category-2 and faculties/industrial participants can compete for category-3. All the oral/poster presentations (online as well as offline) will be evaluated by a group of experts and three best presenters from each category will be awarded in the valedictory function.

IMPORTANT DATES

Online Submission of Abstract by: 31.01.2024

Notification of acceptance: 15.02.2024

Registration Deadline: 25.02.2024

REGISTRATION

Registration fees for the participants are Rs. 1000/- for UG/PG students, Rs. 1500/- for PhD research scholars, Rs. 2000/- for faculties, Rs. 1000/- for accompanying persons, Rs. 3000/- for industry persons. As this conference will be organized through hybrid mode (offline as well as online) therefore one can present his/her oral/poster *via* online mode. For online registration fee just to attend this conference is Rs. 500/- (Only conference attending e-certificate will be provided to them). For foreign participants registration fee is 100 USD. Spot registration will be Rs. 1000/- more in each category. Accommodation charges extra as per requirement.

BANK ACCOUNT DETAILS

Account Name: Akal University
Bank Name: State Bank of India
Branch Name: Talwandi Sabo
IFSC Code: SBIN0050058
QR Code for online payment:
Account No. 36112706739



HOW TO REACH AKAL UNIVERSITY, TALWANDI SABO



CONTACT US

Dr. Sushil Kumar, Convenor

Contact: +91-9813520924

Dr. Ramandeep Kaur, Convenor

Contact: +91-9991622034

Dr. Janpreet Singh, Organizing Secretary

Contact: +91-9878618232

Dr. Puneet Negi, Department of Physics, EU

Email: CTFMA2024@auts.ac.in

TOURIST PLACES NEARBY

Takht Sri Damdama Sahib:

The Takht Sri Darbar Sahib Damdama Sahib, is one of the of Temporal Authority of Sikhism, located in Talwandi Sabo in Punjab, India. At this place Guru Gobind Singh, the tenth Sikh Guru, prepared the full version of the Sikh scriptures called Sri Guru Granth Sahib in 1705.



Qila Mubarak:

Qila Mubarak, is a historical monument in the heart of the city of Bathinda in Punjab, India. It is recognized as monument of national importance and maintained by Archaeological Survey of India. It has been in existence from 1100 to 1200 AD in its current place and is the oldest surviving fort in India.



Bathinda Lake:

Bhatinda is often called City of Lakes for Punjab, This is truly and beautiful place to go with families and kids. Boat Riding throughout the day, with calm makes this place beautiful.



Chetak Park:

Chetak Park. It is around 5 km from Bathinda. A Zoological park and Tourist complex for riding park, Lawns for picnic and lake for boating.



More Places to visit:

Jallianwala Bagh, Sada Pind, Amritsar, Gurudwara Sri Dukh Niwaran sahib, Patiala, Leela Bhawan Patiala, Bhadurgarh Fort, Patiala and many more.

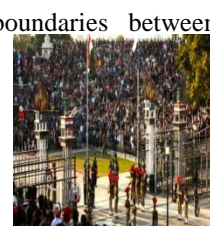
Golden Temple:

The Golden Temple Sri Harimandir Sahib Amritsar is not only a central religious place of the Sikhs, but also a symbol of human brotherhood and equality. Everybody, irrespective of cast, creed or race can seek spiritual solace and religious fulfilment without any hindrance. It also represents the distinct identity, glory and heritage of the Sikhs.



Attari–Wagah border:

Wagah Border marks the boundaries between Indian and Pakistani borders, The Wagah Border Ceremony held every evening, just before sunset, the soldiers from the Indian and Pakistan military meet at this border post to engage in a 30-minute display of military comrade



Ram Tirath Temple:

Ram Tirath is a temple dedicated to Ram. This is the place where Lord Ram and Sita's twins-Luv and Kush were born. It is said that the fight between the army of Ram and Luv and Kush took place at Ram Tirth. The place is also popular for Sage Valmiki's ashram.



The Rock Garden:

The Rock Garden of Chandigarh is a sculpture garden for rock enthusiasts in Chandigarh, India. It is also known as Nek Chand Saini's Rock Garden of Nathupur after its founder Nek Chand Saini, a government official who started building the garden secretly in his spare time in 1957



Sheesh Mahal:

Sheesh Mahal is one of the most magnificent structures in Patiala. The palace was built by Maharaja Narinder Singh in the year 1845 to 1862. The palace was a residential palace which was made in a forest with an artificial lake, fountains, gardens, and a suspension bridge.



Moti Bagh Palace:

Moti Bagh Palace was built by Maharaja of Patiala in 1840. Its construction was started under the rule of Maharaja Narinder Singh and it was completed at the time of Maharaja Bhupinder Singh in the initial years of 20th century.



Mall Road, Shimla

Mall Road is the major hangout point and shopping center in Shimla, the capital city of Himachal Pradesh, India. Constructed during British colonial rule, the Mall road is located a level below The Ridge. The offices of municipal corporation, fire service and police headquarters are located here.



Camel Safari

Desert safari in Bikaner is a bumpy ride which one should experience at least once in a lifetime. One can encounter the lifestyles, culture, forts, castles, cuisine, desert safaris, customs, mysteries, stories, etc. Camel safari takes the travellers to a different world where the landscape is not green, but stunning and it is an adventure of a different kind altogether.

