



Global Conference on Superconductivity (GCS-2025): A New Scientific Horizon for Energy Crisis



INTERNATIONAL YEAR OF
Quantum Science
and Technology

Symposia on
Chemistry and Its Applications (SCA-2025)
Materials for Energy Applications (SMEA-2025)

&

Synthesis and Characterization of Carbon Materials

Destined to Play a Significant Role in the Technology of the New Millennium (SSCCM-2025)

5-7 December 2025



The United Nations has declared 2025 as the International Year of Cooperatives (IYC) and Quantum Science & Technology (IQ). It gives us immense pleasure in sharing the Brochure of the "Global Conference on Superconductivity (GCS-2025): A New Scientific Horizon for Energy Crisis. Under the aegis of GCS-2025 three Symposia will be organized by Department of Chemistry, School of Physical & Decision Sciences, BBAU, Lucknow and The Asian Association of Sugar Cane Technologists' (AASCT), Lucknow from December 5-7, 2025.

For details please visit (<http://www.gcs.org>).

Please send your paper at professorkamansingh2025@gmail.com



International
Cooperative
Alliance
U.N. International
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CONFERENCE VENUE

Bharat Ratna Atal Bihari Vajpayee Auditorium
Babasaheb Bhimrao Ambedkar University
(A Central University)
Lucknow - 226 025, U. P. (INDIA)



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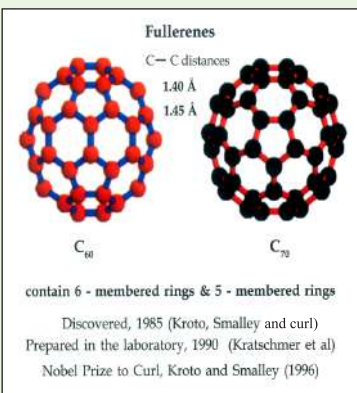
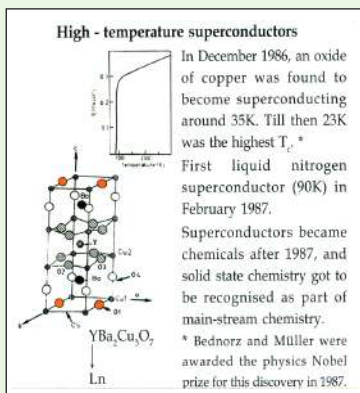
For decades, superconductivity has been the subject of intense discussion in class rooms and laboratories of scientists due to cryogenic requirements of low temperature superconductors. Today, however, superconductivity is being applied to many diverse areas such as: medicine, theoretical and ex-perimental science, the military, transportation, power production, electronics, as well as many other areas.

Historical Background



N.L. Heike
Kammerling Onnes
(1913)

Superconductivity was first discovered in 1911 by the Dutch physicist, Heike Kammerling Onnes. In the same year. He began to investigate the electrical properties of metals in extremely cold temperatures. It has been known for many years that the resistance of metals fell when cooled below room temperature, but it was not known what limiting value the resistance would approach, if the temperature were reduced to very close to 0 K. Onnes passed a current through a very pure mercury wire and measured its resistance as he steadily lowered the temperature. Much to his surprise there was no leveling off of resistance, let alone the stopping of electrons as suggested by Kelvin. At 4.2 K the resistance suddenly vanished. Current was flowing through the mercury wire and nothing was stopping it, the resistance was zero. According to Onnes, "Mercury has passed into a new state, which on account of its extraordinary electrical properties may be called the "superconductive state".



Milestones in Superconductivity

- 1911: Dutch physicist Heike Kamerlingh Onnes discovers superconductivity in mercury at temperature of 4 K.
- 1913: Kamerlingh Onnes is awarded the Nobel Prize in Physics.
- 1933: W. Meissner and R. Ochsenfeld discover the Meissner Effect.
- 1941: Superconductivity in niobium nitride at 16 K.
- 1953: Vanadium-3 silicon found to superconduct at 17.5 K.
- 1962: First commercial niobiumtitanium superconducting wire.
- 1972: John Bardeen, Leon Cooper, and John Schrieffer win the Nobel Prize in Physics for the first successful theory of how superconductivity works.
- 1986: Alex Müller and Georg Bednorz make a ceramic compound of lanthanum, barium, copper, and oxygen that superconducts at 35 K.
- 1987: Ceramic that superconducts at 92 K, bringing superconductivity into the liquid nitrogen range.
- 1988: Allen Hermann of the University of Arkansas makes a superconducting ceramic containing calcium and thallium that superconducts at 120 K. Soon after, IBM and AT&T Bell Labs scientists produce a ceramic that superconducts at 125 K.
- 1993: Superconductor made from mercury, barium and copper, ($Hg_2Ba_2Ca_2Cu_3O_8$) with maximum transition temperature of 133 K.
- 2003: Nobel Prize in Physics and medical science for superconductivity and its application in MRI.

THEMES

Bridging the Gap: Advancing Superconductivity Technologies as a Key Solution for the Energy Transition

Superconducting Electronics: Present toward Future

Modelling High-Temperature Superconductors for Large-Scale Applications: Mechanical, Thermal, and Electromagnetic Behavior

Superconductivity for a Sustainable Future: The Promise of HTS

On the Properties of Elemental and High-Tc Superconductors in a Unified Framework

High-Tc Superconductivity: A Solid State Chemistry Model

High Temperature Superconductivity: Current Results and Novel Mechanisms

Biological Chemistry, Pharmaceutical Chemistry

Nano Technology

Nano Medicine

Experimental & Theoretical Tools in Materials Study

Nanomaterials: Fabrication and Functionalization

Inorganic and Organic Advanced functional Materials

Toxicology and Green Technology

Advanced Optical and Energy Materials

Advanced Polymeric Materials and Carbon Based Materials

Advanced Materials in Environment, Agriculture and Food Technology

Fullerene and Graphene (Raw materials for their commercial production)

Workshop on Commercialization

Natl. Acad. Sci. Lett.

<https://doi.org/10.1007/s40010-024-00889-5>

RESEARCH ARTICLE



Transition Temperature versus Formula Mass of Selected High- T_c Oxide Superconductors: A Step Closure to Room Temperature Superconductivity

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Abstract

The transition temperature T_c of the superconductor signals the onset of superconductivity. We were curious to see the variation of T_c with the formula mass (F_m) of well-studied high- T_c oxide superconductors to observe whether there exists any correlation between T_c and F_m of these oxide superconductors. Interestingly, it is observed that the ratios of T_c/F_m of 8 different high- T_c superconductors which exhibit transition temperature ≥ 90 K, converge to show a ratio of 0.136 with a 14% deviation. Other superconductors and bismuth-based which have T_c less than 90 K differ significantly. Extrapolating the transition temperature to 25 °C, a formula mass F_m of high- T_c oxide superconductor turns to be 2239 with only 14% deviation in different materials which have $T_c \geq 90$ K. This means if oxide superconductors of formula mass 2239 are synthesized, then that materials could exhibit room-temperature superconductivity. The experimental work on YBCO superconductors is underway and results will be communicated essentially an extension of the present work.

Keywords Formula mass · T_c/F_m ratio · Composite · Polymerized superconductors

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- Er. K.K. Pandey, Consultant, BBAU, Lucknow
- Amit Dwivedi, BBAU, Lucknow

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Bharat Ratna Prof. C.N.R. Rao
Source of Inspiration



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VC, BBDU, Lucknow



Prof. Man Singh
CUG, India



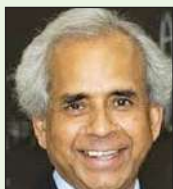
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Prof. Sanjay Srivastava
Kentucky (USA)



Prof. Anuraag Shrivastav
Canada



Prof. Seema Paroha
Director, NSI, Kanpur



Prof. Indra Bahadur
South Africa

Many more to be included

KEY DATES

- Deadline for Abstract Submission: **15 November, 2025**
- Notification of Acceptance of Abstract: **25 November, 2025**
- Last Date for Submission of Full-length Paper and Registration: **30 November, 2025**
- **Conference Date: December 05-07, 2025**
- **Inauguration: December 05, 2025**

	Early Bird (October 15, 2025)	Till Dec. 05, 2025	Spot Registration
Overseas Participant	US\$ 215	US\$ 265	US\$ 316
Overseas Students	US\$ 115	US\$ 165	US\$ 215
Faculty	INR 3000	INR 3500	INR 4000
Research Scholar (Paid)	INR 2000	INR 2500	INR 3000
Research Scholar (Non-Paid)	INR 1800	INR 2000	INR 2500
Student (UG & PG)	INR 1000	INR 1500	INR 2000
Accompanying Person	INR 2500	INR 3000	INR 3500
Participant from Industry	INR 5000	INR 6000	INR 7000

REGISTRATION PROCESS

The registration fee (Which includes the registration and free lunch & dinner, refreshment, tea etc. throughout the conference period) will be charged:

All participants have to pay the registration fees before submitting an application either

(I) via DD in favor of **GCS-2025** OR

(ii) Online transfer to the account of the following

Account Holder's Name: **GCS-2025**

Bank Name: Canara Bank

Branch: BBAU, Lucknow

Account Number: <https://erp.eshiksa.net/DirectFeesv3/BBAU>

Brochure and registration form can also be downloaded from <http://www.GCS-2025.org>

The template for abstract and full-length paper is available on the conference website: www.GCS-2025.org

For any queries, please feel free to write us at [professorkamansingh2025@gmail.com/](mailto:professorkamansingh2025@gmail.com)
drkamansingh@yahoo.com

For all updates please visit our website: <http://www.gcs.org>

Young Scientist Awards

Cash award and Certificates will be given to young scientists (below the age of 35) on competition basis based on oral and poster presentations during the conference.

Accommodation

Accommodation may be arranged for outstation participants in the University Guest House on payment basis as per the tariff and guidelines of the same, depending on the availability. Accommodation in 3 and 4-Star Hotels can also be arranged on payment basis and availability.

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