

31st National Conference on Liquid Crystals (NCLC-2024)

20th – 22nd December, 2024



Organized by

NAVYUG SCIENCE COLLEGE

Morarji Desai Education Compound,
Rander road, Surat-395009, Gujarat, India

Under the auspices of

The Indian Liquid Crystal Society

Website: <https://nscsurat.ac.in>, Email: nclc2024@nscsurat.ac.in



ANNOUNCEMENT

I am delighted to announce the organization of a prestigious National Conference on Liquid Crystal (NCLC), scheduled to be held at Navyug Science College, Surat, Gujarat from 20th to 22nd December 2024. This conference promises to be an illuminating and insightful gathering of leading experts from all over India and Abroad, researchers, and enthusiasts in the field of liquid crystal technology. The agencies like DST/UGC/GUJCOST are the cosponsors for the conference. The NCLC aims to foster collaboration, innovation, and knowledge exchange among professionals from academia, industry, and government sectors. Participants can look forward to engaging keynote presentations, enlightening panel discussions, interactive workshops, and poster sessions showcasing the latest research findings and technological developments in the field. We cordially invite researchers, scientists, engineers, academicians, students, and industry practitioners with an interest in liquid crystal technology to join us for this intellectually stimulating event. Whether you are an established expert or a budding enthusiast, this conference offers a unique platform to network, learn, and contribute to the advancement of liquid crystal science and applications.



NAVYUG VIDYABHAVAN TRUST



The Navyug Vidyabhavan Trust was founded in February, 1965. Late Shree C. K. Pithawala had been the driving force for the setting up of the Navyug Vidyabhavan Trust and continuously drawing inspiration from him. The trust takes note of his multipronged educational and social services rendered selflessly and in the sprint of education. This institute of learning in particular, like many others, owes a great deal to his vision, understanding and missionary zeal right from its inception to its blossoming. This trust has been the fruition of his marathon efforts and huge financial aid without which this dream would have remained unrealized. His contributions in various spheres of Education, Sports, Relief, Culture, Health, and Religion have been significant and praiseworthy. The trust was registered as Public Education Trust under the Bombay Public Trust ACT, 1950 and allotted registration No. 1268. Our Navyug Science College along with Navyug Arts College, Navyug Commerce College, C. K. Pithawala English School, C. K. Pithawala College of Engineering and Technology, C. K. Pithawala College of Commerce – Management – Computer Application, C. K. Pithawala Institute of Pharmaceutical Science & Research, and Maniben Pithawala Industrial Training Institute are also managed by Navyug Vidyabhavan Trust.



NAVYUG SCIENCE COLLEGE

Navyug Science College is one of the best colleges of Navyug Vidyabhavan Trust which came into existence in the year 1965 as a brain child of Late Prin. Dr. D. G. Vashi, an eminent educationist and visionary. It is a premier Grant-in-aid institute in the field of science in South Gujarat region and affiliated to Veer Narmad South Gujarat University, Surat. Our institute is established in 1965. Navyug Science College have the most qualified and skilled teaching staff in various subjects (Chemistry, Physics, Mathematics, Biology, Statistics, English). Our college is well known for its teaching, research as well as hospitality for various cultural programmes.

CHEMISTRY DEPARTMENT

The Chemistry Department of Navyug Science College, Surat is known for graduate and post graduate education as well as research in different discipline in South Gujarat region. It has been funded by different funding agencies like DST & UGC. The faculty consists of six Associate professor, and two Assistant professors. Chemistry department is famous for its most talented, experienced, and eminent professors in South Gujarat region. M. Sc (Regular & self-finance) courses run in Organic chemistry. The faculty undertakes the research in the field of Liquid crystals, surfactant and block copolymers, surface active ionic liquids, corrosion, drugs and dyes through various research programmes and various project [UGC-DAE, DST (SERB), VNSGU]. The chemistry department has produced 37 Ph.D., 6 M. Phil. And published more than hundred Research papers in one of the best journals of National and International repute.

VEER NARMAD SOUTH GUJARAT UNIVERSITY



Veer Narmad South Gujarat University, Surat (Named after the Known Gujarati Poet and revolutionary of Surat), accredited B++ by the NAAC 2022, was established in 1967. The university covers several districts of Gujarat viz. Surat, Valsad, Vapi, Navsari, Narmada, Dang, Bharuch, and Union Territory of Daman. The University has 34 Government, 59 Grant-in-aid and 190 Self-financed Colleges and 104 Post-graduate Teaching Centres (subject wise) attached to affiliated colleges. Navyug Science College is one of the best Grant-in-aid institute of the university in the faculty of science. The university spread over 210 acres and is on the outskirts of Surat city. The university has various faculties viz. Science, Arts, Commerce, Education, Management studies, Rural studies, Engineering and Technology, and Medicine and law etc. The university has also started The Centre of Hindu Studies.

THE SURAT CITY



The word 'Surat' comes from the Sanskrit word 'Suryapur' which is named from the river Tapi, the daughter of Sun (Suryaputri). Surat has grown on the banks of the Holy River Tapi. Surat has been a hub of trade and commerce in 16th century. Surat, the "**Diamond**" and "**Silk city**" of India, holds a unique attraction owing to its rich cultural heritage industrial landscape and thriving industries. The city's moniker is due to its renowned diamond cutting and polishing industry, which has propelled Surat to international acclaim as a major diamond trading Centre. Its bustling diamond markets attract merchants and enthusiasts from across the globe. It is said that people who has come to Surat, either for education or job, has never gone back and became **SURATI** permanently. Surat has been Awarded as "**The cleanest city in India**". Surat is renowned for its vibrant textile industry, world-famous chemical industries, and picturesque overbridges. Surat provides the perfect backdrop for a conference dedicated to exploring the cutting-edge advancements in liquid crystal research and technology. The southwest region of Surat, Hazira industrial zone, on the creek of the Arabian sea is full of internationally known large scale industries like ONGC, KRIBHCO, Reliance, ArcelorMittal Nippon Steel India Limited (Previously Essar Steel), L & T, NTPC etc. Surat is only place in the world which possess "**THREE LEAF BANYAN TREE**". If fourth leaf is developed on one stem then automatically one leaf is detached. This is the place where the funeral rites of Karna was performed by The Lord Krishna using his little figure. Due to the divine origin (The Son of the God Surya), normal fire was unable to consume Karna's body so The Lord Krishna invoked the power of fire on his little finger and completed the cremation of Karna's body. Karna was the son of unmarried mother so he wished to do his last rites on the land which is not "cursed" and that place is "Ashwani kumar", on the banks of river Tapi, Surat. The Lord Krishna had fulfilled Karna's last wish.

THE SURAT CITY

Surat is eminent as the "**Silk City**" for its vibrant textile industry, which dates back to ancient times. The city's skilled artisans produce an array of exquisite silk fabrics that are coveted worldwide for their quality and craftsmanship. One of Surat's distinguishing features is its network of overbridges, which not only enhance connectivity but also add to the city's architectural charm and also serve as iconic landmarks and contribute to Surat's identity as a modern and progressive metropolis. Surat recently made headlines with the unveiling of the '**Diamond Bourse**', the largest commercial building in the world dedicated to the diamond trade. This architectural marvel has further solidified Surat's position as a global leader in the diamond industry and has garnered attention from around the world. Surat is also famous for its food love. There is an old saying '**Surat Nu Jaman Ane Kashi Nu Maran**' which means "**Eat in Surat and Die in Kashi**" for the ultimate experience of the soul. It describes the good reputation of the food of Surat and the death received in the sacred city of Kashi (Varanshi). The Surat Chamber of Commerce and Industry (SCCI) is a prominent business organization located in Surat, Gujarat, India. Established in 1932. It serves as a dynamic hub for business activity, advocacy, and collaboration, contributing significantly to the economic development and prosperity of Surat and its surrounding regions. It serves as a platform for fostering economic growth, advocating for the interests of local businesses, and promoting trade and commerce in the region. Surat's rich heritage, thriving industries, scenic beauty, and architectural landmarks make it an enchanting destination for visitors and a dynamic hub for business and innovation. We are excited to host our conference in this vibrant city and look forward to experiencing all that Surat has to offer.

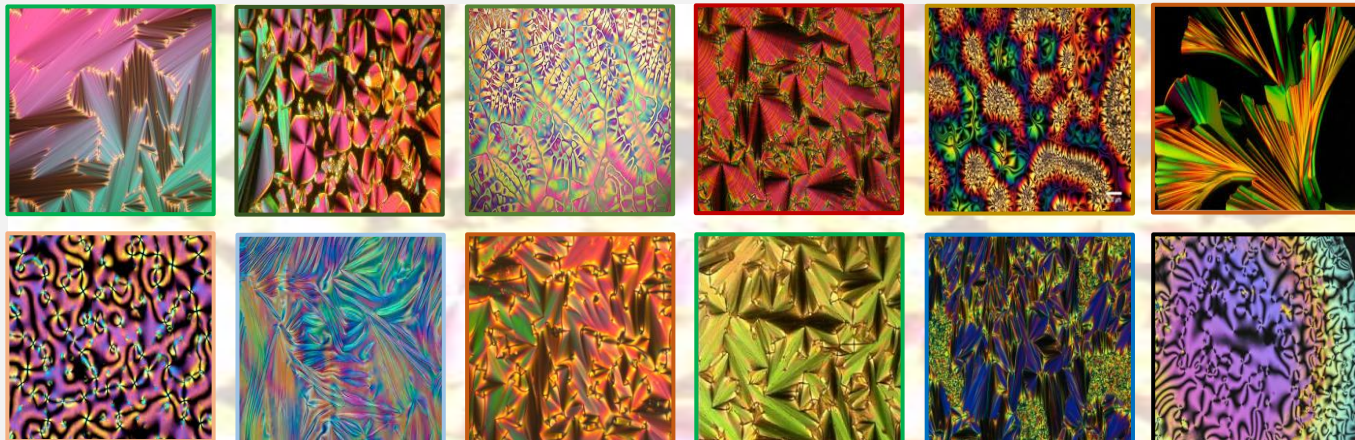
OBJECTIVES AND IMPORTANCE OF CONFERENCE

The study of liquid crystals has played an important role in our increasing understanding of how molecules behave cooperatively and how molecular structure influence this behaviour. Chemists synthesizing new liquid crystal compounds have contributed to our understanding of organic synthesis in general.

Liquid crystals have been used as solvent or medium in which to probe other substances. This flurry of activity also produced liquid crystals displays for watches, calculators, clocks, telephones, camera, office equipment, personal computers, miniature TVs, automobile dash boards and windows that can change from clear to opaque. Other applications include liquid crystal thermometers and temperature sensing films, high strength liquid crystal polymers and surfactants for the oil recovery industry, Lyotropic polyamide liquid crystals now used in manufacture of bullet proof jacket. Progress in our understanding of the liquid crystals phase also aided understanding of the cell membrane and of certain diseases viz. sickle-cell anaemia, and arteriosclerosis.

Numerous established and newly emerging technologies are taking advantage of the novel properties of liquid crystalline materials. Advances in both low molar mass and polymeric systems, ranging from synthesis to device physics, enable the continued integration of this class of the material in to real world applications. This conference will provide forum for discussion of the latest advances in development and the application of liquid crystalline materials. This conference will also provide the platform for the interaction of Indian scientists and International known scientists and share their knowledge in the field of liquid crystals.

India has great strength in the field of synthesis of liquid crystals, physics of liquid crystals and application aspect of liquid crystals. However, this quantum of knowledge in different discipline has not resulted in to commercial application in our country. Therefore, there will be special forum in the conference to have such team of scientists which can work as a team in this direction.



NATIONAL ADVISORY COMMITTEE

- ❖ **Prof. Ravindra Dhar**,
The President, Indian Liquid Crystal Society & Professor,
University of Allahabad
- ❖ **Prof. R. A. Vora**, M. S. University, Vadodara
- ❖ **Prof. B. T. Thaker**, V.N.S.G. University, Surat
- ❖ **Prof. K. K. Raina**, The Honourable Vice Chancellor,
M. S. R. University of Applied Sciences, Bengaluru
- ❖ **Prof. Bhagavatula L. V. Prasad**, CeNS, Bengaluru
- ❖ **Prof. Kattera A. Suresh**, RRI, Bengaluru
- ❖ **Prof. K. S. Krishnamurthy**, CeNS, Bengaluru
- ❖ **Prof. S. Krishna Prasad**, CeNS, Bengaluru
- ❖ **Prof. Sandeep Kumar**, RRI, Bengaluru
- ❖ **Prof. Parameswara Rao Alapati**, NERIST, Arunachal Pradesh
- ❖ **Prof. Shri Singh**, Banaras Hindu University, Allahabad
- ❖ **Prof. A. M. Biradar**, CSIR-National Phys. Lab., New Delhi

SCIENTIFIC TOPICS

- Molecular design and synthesis of LCs.
- Thermotropic & Lyotropic LCs.
- Theory and modelling of LCs.
- Polymeric and biological LCs.
- Liquid crystal-based sensors.
- Phase transition and molecular dynamics of LCs.
- Photonics and LCs.
- Electrooptic applications of LCs.
- Liquid crystal nanocomposites.
- Liquid crystal polymers and elastomers.
- Supramolecular LCs.
- Field effect and LC displays.
- Soft matter, chemistry, and physics.

REGISTRATION

All the participants are required to register by filling the registration form and paying the registration fee and confirm the participation. The registration fee should be paid online. The bank details are provided below. The dually filled registration form and the transaction details of registration fee should be sent on nclc2024@nscsurat.ac.in.

BANK DETAILS

Name of account holder: NAVYUG SCIENCE COLLEGE NCLC
Bank Name: The Surat District Co-operative Bank Limited
Account No: 0000401000197048
BRANCH: NAVYUG COLLEGE
ISFC CODE: SDCB0000037
MICR CODE: 395244013

TRAVEL & ACCOMODATION

Accommodation in Hotels (at participant's cost) can be arranged on request. The participants are requested to arrange funds for registration and travel. The registration fee will cover conference material, lunch/tea/dinner.

NATIONAL ORGANIZING COMMITTEE

- ❖ **Prof. D. S. Shankar Rao**, Vice-President of Indian Liquid Crystal Society & Scientist, CeNS, Bengaluru
- ❖ **Prof. Rajiv Manohar**, University of Lucknow, Lucknow
- ❖ **Prof. C. V. Yelamaggad**, CeNS, Bengaluru
- ❖ **Prof. Santanu Kumar Pal**, IISER, Mohali
- ❖ **Prof. Malay Kumar Das**, Uni. of North Bengal, W.B.
- ❖ **Prof. Maddasani Srinivasulu**, M. I. Technol. Karnataka
- ❖ **Prof. Pankaj Mishra**, IIT Dhanbad, Jharkhand
- ❖ **Prof. Pankaj Kumar**, Chitkara University, Patiala
- ❖ **Prof. Gautam Singh**, Amity University, Uttar Pradesh
- ❖ **Prof. Gurumurthy Hegde**, Christ Uni., Bengaluru
- ❖ **Prof. Surajit Dhara**, Uni. of Hyderabad, Hyderabad
- ❖ **Prof. Manoj Bhushan Pandey**, Vikramajit Singh Sanatan Dharma College, Kanpur
- ❖ **Professor M. Ramakrishna Nanchara Rao**, Andhra University, Visakhapatnam

CALL FOR THE PAPERS

On behalf of organizing committee, you are cordially invited to participate in the conference. We welcome your participants in this conference and request you to send abstract to Dr. Ashwin S. Patel, Convener through email nclc2024@nscsurat.ac.in latest by 15th November, 2024. **One multidisciplinary poster session will also be organized.**

ABSTRACTS

Abstracts for invited talk, oral and poster presentation should be in Times New Roman fonts and A4 format leaving 2.5 cm on top & bottom and 3.0 cm as left and right margins. The title (font size 14) should be in bold followed by author's name(s) and affiliation (both in font size 12), followed by email ID (font size 10) in italics, of the presenting author. The presenting author should be underlined. The text should follow as single space with font size 11 in Times New Roman. References should be placed at the bottom. The abstract should not exceed one page.

IMPORTANT DATES

Conference Dates: 20th – 22nd December, 2024
Submission of abstracts: 24th August, 2024
Last date of abstract submission: 15th Nov, 2024
Last Date of Acceptance Notification: 30th Nov, 2024

REGISTRATION FEE

PARTICIPANT	Before 15 th Nov, 2024	After 15 th Nov, 2024
ILCS Member	3,700/-	4,000/-
Regular (Non ILCS member)	4,200/-	4,500/-
Ph. D. Student (ILCS)	2,000/-	2,500/-
Ph. D. Student (Non ILCS)	2,500/-	3,000/-
Industry Professionals	5,000/-	6,000/-

PLACES TO VISIT AROUND THE CITY

An optional tour can be scheduled after the conference. There are many historical places around the city Surat which attract the Global tourists.

- 1. The Statue of Unity:** The Statue of Unity, located in Gujarat, India, is the world's tallest statue, standing at a towering height of 182 meters (597 feet). The statue symbolizes unity, strength, and the vision of a unified India. It serves as a major tourist attraction, offering panoramic views of the surrounding area. It is approximately 160 kms (3-4 hrs journey by road).
- 2. Saputara:** A hill station situated approximately 160 kms from Surat, offering lush greenery, lakes, and panoramic views, idea for nature lovers and adventure enthusiasts.
- 3. Daman:** Daman, a small coastal town located near Surat in the union territory of Daman and Diu, India, is famous for its beautiful beaches. The top beaches of Daman include Devka beach, Jampore beach, Moti daman beach, and Nani daman beach (Approx. 120 kms journey by road).
- 4.** Participants can also visit world famous Pilgrimage sites in Gujarat viz. **Somnath Jyotirlinga** (Prabhas Patan), **Ambaji Temple** (Ambaji), **Dwarkadhish Temple** (Dwarka), **Nageshwar Jyotirlinga** (Dwarka), **Girnar** (Junagadh), **Lord Hanuman Temple** (Sarangpur), **Jalaram Temple** (Virpur) etc.

CHIEF PATRON

Dr. KISHORSINH N. CHAVDA

The Honourable VICE-CHANCELLOR,
Veer Narmad South Gujarat University, Surat

LOCAL ORGANIZING COMMITTEE

CHAIRMAN

Dr. Ashwin S. Patel

ADVISOR

Prof. B. T. Thaker

ORGANIZING SECRETARY

Dr. Mukesh J. Shah

CO-ORDINATOR

**Prof. Trupti P. Patel, Dr. Pushpaben R. Tandel,
Dr. Kiran S. Contractor, Dr. Jigyasa P. Dave,
Dr. Vijay I. Patel, Dr. Pinank H. Jariwala**

TREASURER

Dr. Manish V. Gondaliya

REGISTRATION FORM

Name (Capital Letters):

Designation:

Gender:

Title of paper (Oral/Poster):

Affiliation:

Education Qualification:.....

Discipline/Specialization:.....

Identity Proof:

Email ID:

Contact No:

Online Payment Details:

Amount: **Date:**

Name of Bank:

Bank Reference Number:

Date:..... & **Place:**

Signature of Applicant

Scanned copy of duly filled in registration form along with ID proof and payment receipt should be emailed to: nclc2024@nscsurat.ac.in.

BONAFIDE CERTIFICATE

This is to certify that Mr./Ms. bearing roll number is a student of (year) (course name) for the academic year He/she is a bonafide student of

..... (College/University). The institute has no objection towards his/her participation in the National Conference on Liquid Crystals (NCLC-2024) organized by Navyug Science College, Surat, Gujarat, India.

Signature of Principal/HOD/Dean/Registrar

ADDRESS FOR COMMUNICATION

Prof. Ashwin S. Patel

Chairman, Convener of NCLC 2024 &
The Principal, NAVYUG SCIENCE COLLEGE,
Morarji Desai Education Complex, Surat-395009,
Gujarat, India

Phone: (O) 0261 2960005, Mobile: 9426189399

Email ID: nclc2024@nscsurat.ac.in,

Website: <https://nscsurat.ac.in>

Contact us: Prof. B. T. Thaker: 9228377618 &

Dr. Vijay I. Patel: 9979509888