

## **CURRICULUM VITAE**

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### **M. K. Srinatha**

C/O Dr. Shanker Govindaswamy  
Liquid crystal Research Laboratory  
Department of Chemistry  
Bangalore University  
Bengaluru - 560 056



Mobile: +917899962424

E-mail: [sreenatha.goutam07@gmail.com](mailto:sreenatha.goutam07@gmail.com)

## **RESEARCH INTERESTS**

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Design, synthesis of Supramolecular Liquid crystals, Room temperature Nematic liquid crystal and Photo-storable liquid crystals. Binary mixtures of liquid crystal and natural chiral systems.

## **ACADEMIC QUALIFICATIONS**

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**Ph. D in the field Organic chemistry, Supramolecular liquid crystals and Nano-materials (January 2016 - till date)**

**Thesis submitted on 11<sup>th</sup> August, 2021 for the award of PhD**

- **Research Supervisor: Dr. Shanker Govindaswamy**, Department of Chemistry, Bangalore University, Bengaluru - 560056, Karnataka, India.

**Thesis title:** "Studies of Novel Supramolecular Liquid Crystals: Molecular Design, Synthesis and Characterization"

- **Master of Science (2013-2015)** - Specialization in Analytical chemistry, Bangalore university, Bangalore
- **Bachelor of science (2010-2013)**- Specialization in PCM

## **RESEARCH EXPERIENCE**

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- Five years of research experience as part my Ph. D degree in Supramolecular liquid crystals.
- Design and implementation of reaction in Liquid crystals.
- Synthesis of novel class of Fiber nematic phases at room temperature.
- Natural systems effect on liquid crystals.
- Multicomponent reactions in Disc and rod shape Liquid crystals.

- Synthesis of hetero-atom containing Disc and rod shape liquid crystals.
- Synthesis of azobenzene photostorage material and their applications towards optical storage devices.
- Well known X-Ray analysis for liquid crystal phase identification.

## PROFESSIONAL COMPETENCE

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- Multi-step synthesis in the area of Supramolecular liquid crystals (milligram to multigram scale).
- Handling of hygroscopic and air-sensitive reagents/skill demanding reactions and reactions at cryogenic temperatures.
- Purification of compounds by column chromatography, Flash chromatography and Prep-HPLC techniques.
- Good knowledge and interpretation of HPLC, NMR ( $^1\text{H}$ ,  $^{13}\text{C}$ ) and mass spectrometry (HRMS, ES-MS), IR for structure determination.
- Knowledge of computer: Well acquainted with MS-Office Word, Excel, Power Point, Chemdraw, Sci-Finder Scholar, Reaxys for literature search.
- Collaborative and independent research work. Actively guided junior colleagues in their research work and M.Sc. students for their internship.
- Preparation and presentation of project reports, posters to the scientific audience. Good technical writing skills - scientific communications, articles, reviews and project proposals.

**Instruments operated** – Optical microscopy (OPM), UV-Absorption spectroscopy, Cyclic voltametry, Differential scanning calorimetry (DSC), LCMS (Agilent TOF), HPLC-1200 series Agilent Chem Station, Yamazen Flash chromatography, Buchi and IKA rotavapor, and Bruker FTIR-8400 spectrophotometer.

## RESEARCH PUBLICATIONS

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### Articles

1. **M. K. Srinatha**, S. Poppe, G. Shanker\*, Alaasar M, Tschierske C, “2,3,4-Trihydroxy Benzonitrile-Based Liquid Crystals: Fiber Forming Room Temperature Nematic Phases” *Journal of Molecular Liquids*, **2020**, 317, 114244, **IF** = **6.165**. [DOI:10.1016/j.molliq.2020.114244](https://doi.org/10.1016/j.molliq.2020.114244).
2. B.N. Sunil, **M. K. Srinatha**, G. Shanker\*, Gurumurthy Hegde, M. Alaasard, C. Tschierske, “Effective tuning of optical storage devices using photosensitive bent-core liquid crystals”, *Journal of Molecular Liquids*, **2020**, 304, 112719, **IF** = **6.165**. [DOI: 10.1016/j.molliq.2020.112719](https://doi.org/10.1016/j.molliq.2020.112719).
3. **M. K. Srinatha**, Ayesha Zeba, Anjali Ganjiwale, Ashwathanarayana Gowda, Gurumurthy Hegde, Mohamed Alaasar<sup>1</sup>, G. Shanker\* “The Influence of Lateral Groups on 4-

Cyanobiphenyl-Benzonitrile Based Dimers” *Liq. Cryst.* **2021**,  
DOI:[10.1080/02678292.2021.1956610](https://doi.org/10.1080/02678292.2021.1956610)

4. G.Shanker, M.K.Srinatha, D.Sandhya Kumari, B.S.Ranjitha, M.Alaasar, Novel green synthetic approach for liquid crystalline materials using multi-component reactions *Journal of Molecular Liquids*, **2022**, 346, 118244, **IF = 6.165**.  
<https://doi.org/10.1016/j.molliq.2021.118244>.

*The following manuscripts are at various levels in the process of publications.*

1. **M. K. Srinatha et al.** “Dielectric and SHG Studies of Liquid Crystal 2,3,4-Trihydroxy Benzonitrile-based Trimer” Manuscript under preparation.
2. **M. K. Srinatha et al.** “Supramolecular self-assembly of 2,3,4-trihydroxy benzonitrile based liquid crystal trimers”

## TEACHING EXPERIENCE

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- Fresher

## CONFERENCES AND SYMPOSIA

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1. Workshop attended on “*New Horizon in Soft Condensed Matter Physics for Interdisciplinary Research*” **9-14 Jan 2017** at MSRamaiah Institute of Technology, Bengaluru 560054.
  2. Participated in the “*One-day National Symposium on Materials for Flexible Devices*” at B.M.S College of Engineering on **25<sup>th</sup> Sept 2017**.
  3. **Oral presentation** in the “*24<sup>th</sup> National conference on liquid crystals*” organised by department of chemical science, IISER Mohali, on **11-13, Oct 2017**.
  4. Participated in “*Peptide Conference*” held at Department of Chemistry, Bangalore University on **14-15<sup>th</sup> Mar 2019**.
  5. Participated in the International Webinar Lecture Series on “*Emerging Trends in Chemical Sciences*” on **28-29<sup>th</sup> Jan 2021** conducted by PG Department of Chemistry, Vijaya College, RV Road, Basavanagudi, Bengaluru - 560 004.
  6. **Poster presentation** in the “*28<sup>th</sup> National conference on liquid crystals*” organised by Dept. of Chemistry Assam University on **21-23, Dec 2021**.
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## PERSONAL PROFILE

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Date of birth: 8<sup>th</sup> December 1992,

Sex: Male,

Marital status: Married

Nationality: Indian

Category: SC (Bhovi)

Languages known: Kannada, English, Telugu

Hobbies: Playing Cricket, Chess, Movies, travel.

Address: Mallasandra village and post, Bagepalli taluk, chickaballapur district-561207.

Phone No: +91-7899962424, E-mail: [sreenatha.goutam07@gmail.com](mailto:sreenatha.goutam07@gmail.com)

## REFERENCES

**1. Dr. Shanker Govindaswamy**

UGC-Assistant Professor

Department of Chemistry

Bangalore University

Bangalore – 560056, India

E-mail: [Maanshaker@gmail.com](mailto:Maanshaker@gmail.com)

Mobile: +91-9886446512

**2. Dr. Gurumurthy Hegde**

Prof.C N R Rao Chair Professor

Centre for Nano-Materials & Displays

BMS College of Engineering

Bengaluru, 560019

E-mail: [hegde@bmsce.ac.in](mailto:hegde@bmsce.ac.in)

Mobile: +91-8762520397

**3. Dr. AchalKumar**

Professor

Department of chemistry

Indian institute of technology Guwahati

Guwahati -781039

E-mail: [achalkumar78@gmail.com](mailto:achalkumar78@gmail.com)

**4. Dr. Santanu kumar pal**

Associate Professor

Department of chemical science

IISER-Mohali

E-mail: [santanupal.20@gmail.com](mailto:santanupal.20@gmail.com)

Mobile: +91-9501047835