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Research Interest

Liquid Crystals, Nanomaterials, Organic Synthesis (Dyes), Ionic Liquids.

Employment History

- ❖ UGC-Assistant Professor, Department of Studies in Chemistry, Bangalore University, Central College Campus, Bangalore, **India** (2014-till date)
- ❖ Assistant Professor, BMS R & D Centre, BMS College of Engineering, Bangalore, **India** (2013-2014)
- ❖ Research fellow at International Iberian Nanotechnology Laboratory, Braga, **Portugal** (2012-2013).
- ❖ Post doctoral research associate in Organic Chemistry Department, Martin-Luther University, Halle-Wittenberg, **Germany** (2008-2012).

Educational Qualification

- ❖ Ph.D. in chemistry from Centre for Nano and Soft Matter Science, Bangalore, **India** (formerly Centre for Soft Mater Research) (2004-2008).
- ❖ Master of Science (M.Sc) in Organic Chemistry, Bangalore University, **India** (1998-2000).

Thesis title: “Studies of Liquid Crystals with Novel Molecular Architecture: Design, Synthesis and Characterization.”

Area of expertise

1. Professional Experience

Job Title	Dates		Name
	From	To	
UGC-Assistant Professor	Dec 2014	Till date	Department of Studies in Chemistry, Bangalore University Jnana Bharathi Campus, Bangalore, India
Assistant Professor	Nov 2013	Nov 2014	BMS R & D Centre, BMS College Engineering, Bangalore, India
Research Fellow	Sep 2012	Oct 2013	International Iberian Nanotechnology Laboratory, Braga, Portugal
Postdoctoral Research Associate	Dec 2008	Aug 2012	Martin Luther University, Halle, Germany
Senior and Junior Research Fellow: Ph.D	Nov 2004	Dec 2008	Centre for Nano and Soft Matter Science (CNSMS), Bangalore, India
Associate Chemist	Jun 2004	Nov 2004	AstraZeneca Pharma India Limited, Bangalore, India
Scientist	Aug 2001	Jun 2004	Jubilant Biosys Limited, Bangalore, India
Research & Development Chemist	Aug 2000	Aug 2001	Tetragon Chemie Limited, Bangalore, India

2. Obtained Grants

Grant Name	Role	Grant Money	Duration
UGC Start-Up Grant	Investigator	₹6,00,000	2016-2018
SERB-Early Career Research Award	PI	₹33,22,000	2017-2021
SERB-Early Career Research Award	Co-PI	₹38,00,000	2017-2020
Industry-Academia Research Project (IARP)-IMAGE LABELS PVT. LTD.	PI	₹6,00,000	2017-2018

3. Awards and Fellowships

- ❖ Recipient of **silver medal** at **ITEX 2015, International Invention and Innovation Exhibition**, Ministry of Science Technology and Innovation, Kuala Lumpur, **Malaysia**, 21-23rd May, 2015 for “**Photo Locking Storage Materials**”.

4. Personal profile:

Name : SHANKER .G
Father's Name : Govindaswamy .N
Sex : Male
Nationality : Indian

Book Published:

- 1) **G. Shanker**; “*Self-Assembly of Homomeric Dipeptides, Bisamides and Dimers*” Saarbrücken: Lambert Academic Publishing, **2015**, Print; *ISBN number 978-3-659-72047-5*.
- 2) P Hareesh Kumar and **G Shanker**,*“ An Experimental Treatise in ORGANIC SYNTHESIS” Saarbrücken: Lambert Academic Publishing, **2020**, Print; *ISBN number 978-620-3-85422-0*.
- 3) **G. Shanker***, J. Dinesh Kumar, Bishwajit Paul, *A Primer for Post Graduates Organic Chemistry Laboratory Experiments*, Notion Press; 1st edition, 4 August **2021**, 978-168-5-23120-0

Patent(s):

- 1) Awarded Indian Patent No 345638 “Compounds Exhibiting Chiral Nematic Phase” dated 28-09-2019
- 2) Indian Patent Application No 201941027691, dated **10/07/2019**. “A Light-Sensitive Diazo Cross Linker that Reduces Curing Time”

Some of my research studies have been published in the following journals.

Total Citations of published journals are more than 890, h-index 19 (Source: Mendeley, as on 16-12-2021)

2021

40. 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: Accepted* , **2021**, <https://doi.org/10.1016/j.molliq.2021.118244>, **IF= 6.165**

39. B. N Sunil, M. Monika, Shanker Govindaswamy, Gurumurthy Hegde and Veena Prasad, “Evaluation of Photoswitching Properties for Hockey Stick-Shaped Mesogens Bearing Azo Benzene Moieties“, *Frontiers in Physics*, **2021**, 9, 728632(1-9), **IF = 3.560**.

38. M. K. Srinatha, Ayesha Zeba, Anjali Ganjiwale, Ashwathanarayana Gowda, Gurumurthy Hegde, Mohamed Alaasar, G. Shanker*, The Influence of Lateral Groups on 4-Cyanobiphenyl-Benzonitrile Based Dimers, *Liq. Cryst.*, **2021**, DOI: 10.1080/02678292.2021.1956610, **IF = 3.09**.

37. Shruthi, Michal Smahel, Michal Kohout , G. Shanker, Gurumurthy Hegde, “Influence of linking units on the photo responsive studies of azobenzene liquid Crystals: Application in optical storage devices“ *Journal of Molecular Liquids*, **2021**, 339, 116744 (1-10), **IF = 6.165**

36. Govindaswamy Shanker*, Bishwajit Paul, Anjali Ganjiwale., Amino Acid and Peptide-Based Liquid Crystals: An Overview” (Invited article) *Current Organic Synthesis*, “, **2021**, 18, 333-351, Thematic issue, **IF = 1.983**.

2020

35. Sherin Rison, K. B. Akshaya, Vinay S Bhat, G. Shanker, T. Maiyalagan, E. K. Joice, Gurumurthy Hegde, and Anitha Varghese, MnO₂ Nanoclusters Decorated on GrapheneModified Pencil Graphite Electrode for Non-Enzymatic Determination of Cholesterol, *Electroanalysis*, **2020**, 32, 2128 – 2136, **IF = 3.223**

34. Sunil B N, Paresh Kumar Behera, Ammathnadu S. Achalkumar, G. Shanker and Gurumurthy Hegde, “Effect of inter- and intramolecular H-bonding on the mesomorphic and photoswitching studies of (E)-4-((4-(hexyloxy) phenyl) diazenyl)-N-phenyl benzamides“ *RSC Adv.*, **2020**, 10, 20222, **IF = 3.049**

33. 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**.

32. S. A. Incharaa, B. N. Veerabhadraswamyb, Bishwajit Paul, Gurumurthy Hegdec, C. V. Yelamaggad, **G. Shanker***, Supramolecular self-assembly properties of metallo-ionic phthalocyanines constituting regioisomers, *ChemistrySelect*, **2020**, 5, 10106-10113., **IF= 1.811**.

31. B.N. Sunil, M.K. Srinatha, **G. Shanker***, GurumurthyHegde, 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**.

2019

30. Rashmi Prabhu, Sachin A. Bhat, **Govindaswamy Shanker**, Channabasaveshwar V. Yelamaggad., Frustrated Liquid Crystal Phases in Optically Active, Schiff Base Dimers Derived from Cholesterol: Synthesis and Rich Phase Transitional Behavior., *New J. Chem*, 2019, 43, 2148-2162, **IF = 3.20**

29. **G. Shanker***.,A. Bindushree, K. Chaithra, P. Pratap, Ravindra Kumar Gupta, A. S. Achalkumar, C. V. Yelamaggad, Single Component Room Temperature Chiral Nematic Liquid Crystals” *Journal of Molecular Liquids*, 2019, 275, 849-858, **IF= 6.165**

2018

28. K. Merkel, A. Kocot, J. K. Vij **G Shanker**, Distortions in structures of the twist-bend nematic phase of a bent-core liquid crystal by the electric field” ., *Physical Review E*, 98, 022704 (2018), **IF = 2.28**

2017

27. Balaram Pradhan, Nirmalangshu Chakraborty, Ravindra Kumar Gupta, **G. Shanker**, Ammathnadu S. Achalkumara., “Nonsymmetrical cholesterol dimers constituting regioisomeric oxadiazole and thiadiazole cores: an investigation on structure-property correlation”. *New J. Chem.*,2017, 41, 879-888, **IF = 3.20**.

26. Sithara P. Sreenilayam, Vitaly P. Panov, Jagdish K. Vij, **Govindaswamy Shanker.**, “The N_b phase in an achiral asymmetrical bent-core liquid crystal terminated with symmetric alkyl chains” Accepted *Liq. Cryst.*, 2017, 44, 244-253; **Impact Factor = 2.486**.

2016

25. Gurumurthy Hegde*, **G. Shanker** S. M. Gan, A. R. Yuvaraj, Syed Mahmood, Uttam Kumar Mandal, “Synthesis and liquid crystalline behavior of substituted (E)-phenyl-4-(phenyldiazenyl) benzoate derivatives and their photo switching ability”. *Liq. Cryst.*, 2016, 11, 1578-1588; **Impact Factor = 2.486**

24. **G. Shanker***, Gurumurthy Hegde, and C. Rodriguez-Abreu*, “Self-assembly of Thiocyanine Dyes in Water for the Synthesis of Optically Active Hybrid Nanofibres”., *Liq. Cryst.*, 2016, 43, 473-483; **Impact Factor = 2.486**

2014

23. R. Balachandran, V. P. Panov, J. K. Vij*, **G. Shanker**, C. Tschierske K. Merkel and A. Kocot “Dielectric and Electro-optic studies of a bimesogenic liquid crystal composed of bent-core and calamitic units”., *Phys. Rev. E.*, 2014, 90, 0325906-9; **Impact Factor = 2.28**.

22. R. Prabhu, C. V. Yelamaggad and **G. Shanker***, “ Self-Organization Properties of Homomeric Dipeptides derived from Valine”., *Liq. Cryst.*.,; 2014, 41, 1008-1016; **Impact Factor = 2.486**

21. **G. Shanker**, M. Prehm, M. Nagaraj, J. K. Vij, M. Weyland, A. Eremin and C. Tschierske*, "1,2,4-Oxadiazole Based Bent-Core Liquid Crystals with Cybotactic Nematic Phases"., *ChemPhysChem.*, 2014, 15, 1323-1335. (Invited article); **Impact Factor = 3.419**; Inside cover page

2012

20. **G. Shanker**, M. Nagaraj, A. Kocot, J. K. Vij, M. Prehm and C. Tschierske*, "Nematic Phases in 1,2,4-Oxadiazole Based Bent-Core Liquid Crystals – Is There a Ferroelectric Switching?"., *Adv. Funct. Mater.*, 2012, 22, 1671-1683; **Impact Factor = 11.805**
19. N. Koizumi, **G. Shanker**, F. Araoka, K. Ishikawa, C. V. Yelamaggad and Hideo Takezoe*, "Interplay between polarity and chirality in the electric-field-responsible discotic columnar phase of a dipeptide derivative"., *NPG Asia Mater*, 2012, 4, e11; DOI:10.1038/am.2012.20; **Impact Factor = 10.118**
18. **G. Shanker**, D. S. Shankar Rao, S. K. Prasad and C. V. Yelamaggad*, "Synthesis and characterization of supramolecular, optically active bisamides derived from amino acids"., *Tetrahedron.*, 2012, 68, 6528-6534; **Impact Factor = 3.06**
17. **G. Shanker**, M. Prehm and C. Tschierske*, "Liquid Crystalline Heterodimesogens and ABA-Heterotrimesogens Comprising a Bent 3,5-Diphenyl-1,2,4-oxadiazole Central Unit". *Beilsteins J. Org. Chem.*, 2012, 8, 472-485; (Invited article); **Impact Factor = 2.762**
16. **G. Shanker** and C. V. Yelamaggad*, "Synthesis and Thermal Behavior of Chiral Dimers: Occurrence of Highly Frustrated and Cholesteric Liquid Crystal Phases"., *New J. Chem.*, 2012, 36, 918-926; **Impact Factor = 3.159**
15. **G. Shanker**, M. Prehm and C. Tschierske*, "Laterally Connected Bent-Core Dimers and Bent-Core-Rod-Couples with Nematic Liquid Crystalline Phases"., *J. Mater. Chem.*, 2012, 22, 168-174; **Impact Factor = 6.626**
14. **G. Shanker**, D. S. Shankar Rao, S. K. Prasad and C. V. Yelamaggad*, "Self-Assembly of Chiral Hexacatenar-Bisamides into Columnar Structure"., *RSC Adv.*, 2012, 2, 1592-1597; **Impact Factor = 3.840**

2011

13. **G. Shanker**, M. Prehm, M. Nagaraj, J. K. Vij and C. Tschierske*, "Development of polar order in a bent-core liquid crystal with a new sequence of two orthogonal smectic and an adjacent nematic phase"., *J. Mater. Chem.*, 2011, 21, 18711-18714; **Impact Factor = 6.626**
12. **G. Shanker** and C. Tschierske*, "Synthesis of Non-symmetrically Substituted 1,2,4-Oxadiazole Derived Liquid Crystals"., *Tetrahedron.*, 2011, 67, 8635-8638; **Impact Factor = 3.06**
11. **G. Shanker** and C. V. Yelamaggad*, "Synthesis and Phase Transitional Behavior of Dimer-Like Optically Active Liquid Crystals"., *J. Phys. Chem. B.*, 2011, 115, 10849-10859; **Impact Factor = 3.377**
10. **G. Shanker** and C. V. Yelamaggad*, "A New Class of Low Molar Mass Chiral Metallomesogens: Synthesis and Characterization"., *J. Mater. Chem.*, 2011, 21, 15279-15287; **Impact Factor = 6.626**
09. **G. Shanker***, M. Prehm, C. V. Yelamaggad and C. Tschierske, "Benzylidenehydrazide Based Room Temperature Columnar Liquid Crystals"., *J. Mater. Chem.*, 2011, 21, 5307-5311; **Impact Factor = 6.626**

2010

08. G. G. Nair, S. K. Prasad*, R. Bhargavi, V. Jayalakshmi, **G. Shanker** and C. V. Yelamaggad, “Soft Glass Rheology in Liquid Crystalline Gels Formed by a Monodisperse Dipeptide”. *J. Phys. Chem. B.*, 2010, *114*, 697 – 704; **Impact Factor = 3.377**

2009

07. C. V. Yelamaggad*, R. Prabhu, **G. Shanker** and D. W. Bruce, “Optically-active, Mesogenic Lanthanide Complexes: Design, Synthesis and Characterisation”. *Liq. Cryst.*, 2009, *36*, 247-255; **Impact Factor = 2.486**; *Cover page*.
06. G. G. Nair, S. K. Prasad*, V. Jayalakshmi, **G. Shanker** and C. V. Yelamaggad, “Fast responding robust nematic liquid crystalline gels formed by a monodisperse dipeptide: electro-optic and rheological studies”. *J. Phys. Chem. B.*, 2009, *113*, 6647 – 6651; **Impact Factor = 3.377**

2008

05. C. V. Yelamaggad*, **G. Shanker**, R. V. Ramana Rao, D. S. Shankar Rao, S. K. Prasad and V. V. Suresh Babu, “Supramolecular Helical Fluid Columns from Self-Assembly of Homomeric Dipeptides”. *Chem. Eur. J.*, 2008, *14*, 10462 – 10471; **Impact Factor = 5.731**
04. C. V. Yelamaggad* and **G. Shanker**, “Liquid crystal dimers derived from naturally occurring chiral moieties: synthesis and characterization”. *Tetrahedron.*, 2008, *64*, 3760-3771; **Impact Factor = 3.06**
03. C. V. Yelamaggad*, **G. Shanker**, Uma S. Hiremath and S. K. Prasad, “Cholesterol-based non-symmetric liquid crystal dimers: an overview”. *J. Mater. Chem.*, 2008, *18*, 2927-2949; **Impact Factor = 6.626**

2007

02. C. V. Yelamaggad* and **G. Shanker**, “Mesomorphic chiral nonsymmetrical dimers: synthesis and characterization”. *Liq. Cryst.*, 2007, *34*, 799-809; **Impact Factor = 2.486**
01. C. V. Yelamaggad* and **G. Shanker**, “Synthesis and characterization of nonsymmetric chiral dimers”. *Liq. Cryst.*, 2007, *34*, 1045-1057; **Impact Factor = 2.486**

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