Faculty Name: Dr. Sumyra Sidiq
Designation: Assistant professor
Subject: Chemistry
Area of Specialization: Physical Chemistry
College: Govt. Degree College, Anantnag
Email: sumyrasidiq1213@gmail.com
Phone: 7889899985
Date of Appointment: 07-04-2017

Research Interests

Liquid crystals (LCs) at aqueous interfaces:

- To understanding the role of important biomolecular interactions for bedside diagnostics and laboratory applications.
- To design LC based sensors which hold promise to act as a marker for cells and cell based interactions.

Awards and Achievements

- Qualified CSIR-JRF in Dec, 2010.
- The Dewan Jawahar Lal Nayar Memorial prize for best poster at 19th National Conference on Liquid Crystals (NCLC-19) in Nov, 2012 held at Thapar University, Patiala.
- Received DST-SERB International QAz to attend the International Liquid Crystal Conference (ILCC) held in Trinity College, Dublin, Ireland from 29th June to 2nd July, 2015.
- "*Poly (L-Lysine) liquid crystal coated droplets for cell-based sensing applications"* was featured as the Front cover in jpcB.
- "*Colloid-in-Liquid Crystal Gels that Respond to Biomolecular Interactions*" was featured as the Front Cover in Small.
- "*Colloid-in-Liquid Crystal Gels that Respond to Biomolecular Interactions*" This work was selected for Press Release; see the following link in The Indian Express.

- "*A simple quantitative method to study protein lipopolysaccharide interactions by using liquid crystals"* was featured as cover image in ChemPhysChem.
- "A new pathway for the formation of radial nematic droplets within a lipid-laden aqueous-liquid crystal interface." This work was selected for Press Release; see the following link in The Indian Express.

- "*A new visual test for p-quinone and its relevance to the biodiesel industry*" was selected as Key Scientific Article in Renewable Energy Global Innovations. This article was also featured in the Front End of Biodiesel Magazine.

Workshops,Seminars.Symposia and Conferences attended

Oral presentation

- **Sidiq**, **S**; Pal, S. K. "*Biocompatible liquid crystals droplets for monitoring cellular events*", 22nd National Conference on Liquid Crystals (NCLC-22), DIT University, Dehradun, India (21st-23rd December, 2015).
- **Sidiq**, **S**; Verma, I; Pal, S. K. "*pH-driven Ordering Transitions in Liquid Crystal induced by Conformational Changes of Cardiolipin*", 21st National Conference on Liquid Crystals (NCLC-21), Vikramajit Singh Sanatan Dharm (VSSD) College, Chhatrapati Shahu Ji Maharaj University, Kanpur, India (10th-12th November, 2014).

Poster presentation

- **Sidiq**, **S**.; Das, D.; Pal, S. K. "*Lipid–induced structural reorganization of water droplets to liquid crystal droplets*", 25th International Liquid Crystal Conference (ILCC-2014), Trinity College, Dublin, Ireland (29th June to 2nd July, 2014).
- **Sidiq**, **S**.; Das, D.; Pal, S. K. "*Spontaneous evolution of radial nematic droplets within a lipid laden aqueous liquid crystal interface*", 20th National Conference on Liquid Crystals (NCLC-20), Manipal Institute of Technology, Manipal University, Manipal, India (16th-18th December, 2013).
- **Sidiq**, **S**.; Setia, S; Pal, S. K. "*Surface-Driven Ordering Transition in Thin Films of Colloid-in-LC gels for Optical Amplification of Biomolecular Interactions*", 19th National Conference on Liquid Crystals (NCLC-19), Thapar University, Patiala, India (21st-23rd November, 2012).

Participation

- International Webinar On SYFT-MS:How it is Advantageous over the GC-MS/LCMS Tecniques in association with SYFT Technologies, Middleton, Christchurch-New Zealand, BMS Institute of Technology and Management, Bengaluru (21st Oct, 2020)
- Two days national Webinar on Instrumental Methods of Analysis (NWIMA-2020), Association of Chemistry Teachers (ACT), Department of Chemistry, Kamla Nehru Mahavidyalaya and Kalasalingam Academy of Research and Education, Krishnakoli, India (17th -18th October 2020).
- International Webinar on Advances in Chemical Science and Engineering, Govt. Bilasa Girls P.G. Autonomous College, Bilasapur, Chhattisgarh (18th July, 2020)
- International Conference on Nano-biotechnology, Centre for Interdisciplinary Research in Basic Sciences, Jamia Milla Islamia, New Delhi-110025 (5-6 February, 2018).
- 24th National Conference on Liquid Crystals (NCLC-2017), Indian Institute of Science Education and Research Mohali (IISERM), S.A.S. Nagar Mohali, India (11th -13th October, 2017).

- 3-Day state Level Workshop on "Anthropogenic Environmental Perturbations and Role of Environmental stewards in Sustainable Environment", Department of Botany, Govt. Degree College For Women, Anantnag (April 24-26, 2018).
- *National Seminar on Crystallography 43A*, Indian Institute of Science Education and Research Mohali (IISERM), S.A.S. Nagar Mohali, India (13^{th} -17^{th} October, 2014).
- *7^{th} Junior Organic Symposium (JNOST),* Indian Institute of Science Education and Research Mohali (IISERM), S.A.S. Nagar Mohali, India (14^{th}-17^{th} December, 2011)**.**

Orientation, Refresher and Faculty Development Programmes attended

1. Participated in **Refresher Course in Chemistry** Organized by *UGC-HRDC, Kumaun University, Nainital* from 15 Feb to 28 Feb 2020.
2. Participated in **Faculty Development Programme** Organized by *Department of Chemical Engineering of GMR Institute of Technology, Rajam* from 26^{th} Oct to 30^{th} Oct 2020.
3. Participated in **General Orientation Course** Organized by *UGC-HRDC, University of Jammu* from 3^{rd} Dec to 23rd Dec 2019.

Research Publications

1. Verma, I.;, **Sidiq, S**.; Pal, S. K. Protein triggered ordering transitions in poly (L-lysine)-coated liquid crystal emulsion droplets. *Liq.Cryst.* **2019**, 46, 1318-1326.
2. Verma, I.;, **Sidiq, S**.; Pal, S. K. Poly(l-lysine) Coated Liquid Crystals for Sensitive detection of DNA and their Applications in Controlled release of Drug Molecules. *ACS Omega.* **2017**, *2*,7936-7945.
3. **Sidiq, S**.; Prasad, G. V. R. K.; Mukhopadhaya, A.; Pal, S. K. Poly (L-Lysine) liquid crystal coated droplets for cell-based sensing applications. *J. Phys. Chem,. B,* **2017***,121,*4247-4256.
4. Verma, I.;, **S**.; Pal, S. K. Detection of creatinine using surface-driven ordering transitions of liquid crystals. *Liq. Cryst.* **2016**, doi:10.1080/02678292.2016.1161092.
5. Das, D.; **Sidiq, S**.; Pal, S. K. Design of bio-molecular interfaces using liquid crystals demonstrating endotoxin interactions with bacterial cell wall components. *RSC Adv.* **2015**, *5*, 66476-66486.
6. **Sidiq, S**.; Verma, I.; Pal, S. K. pH-Driven Ordering Transitions in Liquid Crystal Induced by Conformational Changes of Cardiolipin. *Langmuir* **2015**, *31*, 4741−4751.
7. Das, D.;‡ **Sidiq, S**.;‡ Pal, S. K. A simple quantitative method to study protein lipopolysaccharide interactions by using liquid crystals. *ChemPhysChem* **2015**, *16*, 753-760 (‡*Joint first authors*).
8. **Sidiq, S**.; Pal, S. K. Lipid-Induced Structural Turnover of Water droplets to Liquid crystal Droplets. *AIP Conf. Proc.* **2014,** *1591*, 33-35.
9. **Sidiq, S**.; Das, D.; Pal, S. K. A new pathway for the formation of radial nematic droplets within a lipid-laden aqueous-liquid crystal interface. *RSC Advances* **2014**, *4*, 18889-18893.

10. Agarwal, A.; **Sidiq, S.**; Setia, S.; Bukusoglu, E.; de Pablo, J. J.; Pal, S. K.; Abbott, N. L. Colloid-in-Liquid Crystal Gels that Respond to Biomolecular Interactions. *Small* **2013**, *9*, 2785-2792.
11. Gupta, S. K.; Setia, S.; **Sidiq, S**.; Gupta, M.; Kumar, S.; Pal, S. K. New perylene-based non-conventional discotic liquid crystals. *RSC Advances* **2013**, *3*, 12060-12065.
12. Setia, S.; Soni, A.; Gupta, M.; **Sidiq, S**.; Pal, S. K. Microwave-assisted synthesis of novel mixed tail rufigallol derivatives. *Liquid Crystals* **2013,** *40*, 1364-1372.
13. Ghosh, S.; Setia, S.; **Sidiq, S**.; Pal, S. K. A new visual test for p-quinone and its relevance to the biodiesel industry. *Analytical Methods* **2012,** *4*, 3542-3544.
14. Setia, S.; **Sidiq, S**.; Pal, S. K. Microwave-assisted synthesis of novel oligomeric rod-disc hybrids. *Tetrahedron Letters* **2012**, *53*, 6446-6450.

Review Articles

1. Setia, S.; ‡ **Sidiq, S**.; ‡ De, J.; Pani, I.; Pal, S. K. Applications of liquid crystals in biosensing and organic light-emitting devices: future aspects. *Liq. Cryst.* **2016**, Doi.org/10.1080/02678292.2016.1213002 (‡*Joint first authors*).
2. **Sidiq, S**.; Pal, S. K. Liquid Crystal Biosensors: New Approaches. *Proc. Indian. Natn. Sci. Acad.* **2016**, DOI: 10.16943/ptinsa/2016/v81i1/.

Patents

- Inventors: Pal, S. K; **Sidiq, S**.; IISER Mohali, Indian Patent Application No. 102/DEL/2014 dated 14.01.2014 entitled "*A novel technique for preparation of liquid crystal droplets."*

Membership of Scientific Societies

- Member of Indian Liquid Crystal Society.

Academic Qualifications

Examination Passed	Board/ University	Subjects	Year	Division/ Grade/merit
SSC	BOSE	GENERAL	2002	Distinction
Higher secondary	BOSE	PCB	2003	FIRST
Bachelor's Degree	University of Kashmir	English, Chemistry Zoology &Botany	2007	FIRST
Master's Degree	University of Kashmir	Chemistry	2010	FIRST
NET/SLET	NET/JRF		2010	
DCA	RCSM	COMPUTER APPLICATION	2007	Distinction
B.Ed.	University of Kashmir	General	2011	First

Research Experience

Research Stage	Title of Thesis	University where the work was carried out	Year
Ph.D.	New Approaches to the Design of Liquid Crystal-based Biosensors	IISER Mohali	2016

Teaching Experience

Courses Taught	Name of the University/College/Institution	Duration
MSc and BSc	Govt. Degree College(Boys), Anantnag	5th Nov 2023- till date
BSc Courses:	Govt. Degree College For Women, Anantnag	April 2017-5th Nov 2023
BSc MSc Integrated: • CHM 101 Chemistry	Central University of Kashmir, Srinagar	Dec2016-Mar-2017
BS/MS courses: • CHM212–Organic Chemistry Lab • CHM211 – Physical Chemistry Lab	IISER Mohali	Jan2012-Dec-2012