

## **Dr. Sripada Haldar**

**M.Sc., Ph.D.**

**Professor**

### **Members of Learned Societies:**

Indian Science Congress Association (ISCA), Indian Liquid Crystal Society

### **Contact Addresses:**

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### **Mailing Address**

Department of Physics, University of North Bengal, P.O.:- North Bengal University, Dist.:- Darjeeling, West Bengal, Pin -734013, India

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**Subject specialization:** Electronics and Radio-Physics

**Areas of Research Interest:** Liquid Crystals and Study of Equatorial Ionisation Anomaly

### **No. of Ph.D. students:**

(a) Supervised: 01 (b) Ongoing: 02

**No. of Publications: 20**

### **Achievement & Awards:**

M.Sc. – Rank 2

Cleared GATE, SLET,

Completed Three Minor Research Projects (UGC),

Attended – 02 (International Conferences), 15 (National Conferences)

### **Professional experiences:**

- UG – 5 Years
- PG – 18 Years

### **Co-curricular activities:**

- Organizing member of Seminar on Hundred years of Three Seminal Papers of Albert Einstein & Contemporary Ideas, January 03 –05, 2005.
- Organizing member of Workshop on stars and galaxy: Dept. of physics, (observational techniques and data analysis) Sept.12-15, 2006 .
- Joint organizing secretary of 14<sup>th</sup> National Seminar on Liquid Crystals 17<sup>th</sup> -19<sup>th</sup> Dec. 2007 , ILCS.
- Organizing member of Preparatory SERC School in High Energy Physics by Science and Engineering Research Board from 12<sup>th</sup> September to 10<sup>th</sup> October 2012.
- Conducted Joint Entrance Screening Test 2013.
- Organizing member of Technical Programme Discussion Meeting held in North Bengal University on December 1-2, 2013.
- Centre Co-ordinator for conducting Joint Entrance Screening Test on 16<sup>th</sup> February , 2014.
- Conducted Bose Test, 2014.
- Conducted Joint Entrance Screening Test, 2015.
- Conducted Bose Test, 2015.
- Organized Conference on Modern Trends in Material Science 5<sup>th</sup> February to 6<sup>th</sup> February , 2015.
- Organizing member of 22<sup>nd</sup> West Bengal Science and Technology Congress 28<sup>th</sup> February to 1<sup>st</sup> March, 2015.
- Conducted Joint Entrance Screening Test, 2016.

### **Contribution to corporate life and management of the institution:**

- Member of the Board of Under-Graduate Studies in Physics.
- Member of Faculty council for P.G. studies in sciences
- Member of P.G. Board of studies in Physics
- Member of Indian Liquid crystal Society.
- Member of Programme sub Committee for University Convocation.
- Member of medical Sub-Committee of 44<sup>th</sup> - 48<sup>th</sup> Annual Convocation of North Bengal University from 2014-2018.
- Member of Indian Science Congress Association.

- Head of the Department, Physics, North Bengal University from 8<sup>th</sup> February, 2018 to 7<sup>th</sup> February, 2020.
- Superintendent of Vidyasagar Hall of Residence from 1<sup>st</sup> May, 2018.
- Attended 20<sup>th</sup> -24<sup>th</sup> meeting of the North Bengal University Court held from 01.08.2018 -27.09.2019.
- Member of the Disciplinary Committee and constituted a meeting on 06.12.2019.
- Life Member of Dalit bandhob samity, North Bengal University.

### **Professional development activities:**

- Appointed as visiting faculty from University of Gour Banga, 2015.
- Attended several Board of Research Studies meeting under faculty of science.
- Attended the meeting of Screening Committee at St. Joseph's College in connection with the promotion under CAS of Mr. Debargha Goswami, Assistant Professor of Physics, St. Joseph's College, Darjeeling from Stage 1 to Stage 2 on 08.09.2018.
- Assessment Committee member for extension of the tenure of fellowship as S.R.F. from J.R.F. of Biplab Rajbanshi in Chemistry on 05.07.2019.
- Attended the meeting of Selection Committee at University of North Bengal in connection with the promotion under CAS of Mr. Kartick Chandra Dey, Assistant Professor of Physics, APC Roy Govt. College, Siliguri from Stage 3 to Stage 4 on 16.08.2019.
- Attended the meeting of Screening Committee at University of North Bengal in connection with the promotion under CAS of Dr. Mihir Sarkar, Assistant Professor of Physics, A.C. College, Jalpaiguri from Stage 2 to Stage 3 on 16.08.2019.
- Attended several meeting of Faculty Council of P.G. Studies in Science, NBU .
- Attended the meeting of Screening Committee at University of North Bengal in connection with the promotion under CAS of Dr. Romyani Goswami, Assistant Professor of Physics, Surya Sen College Siliguri from Stage 2 to Stage 3 on 08.11. 2019.

- Attended the meeting of Screening Committee at University of North Bengal in connection with the promotion under CAS of Mr. Pravat Dangal, Assistant Professor of Physics, St. Joseph's College, Darjeeling from Stage 1 to Stage 2 on 03.02.2020.
- Attended the meeting of Screening Committee at University of North Bengal in connection with the promotion under CAS of Dr. Dilip Paul, Assistant Professor of Physics, Islampur College, Uttar Dinajpur from Stage 2 to Stage 3 on 03.02.2020.
- Appointed as External Examiner of P.G. 1<sup>st</sup> Semester Physics Practical on 21.01.2020 from Cooch Behar Panchanan Barma University.
- Attended the meeting of Ph.D Viva Voce as Examiner of Debargha Goswami, Assistant Professor of Physics, St. Joseph's College, Darjeeling on 04.02.2020.

#### **Selective List of Publications (2007 – present):**

- X-ray diffraction and optical birefringence studies on four nematogenic difluorobenzene derivatives, S. Biswas, **S. Haldar**, P. K. Mandal and W. Haase, *Liquid Crystals*, Vol. 34, No. 3, P. 365 – 372, March 2007.
- Crystal structure of a polar nematogen 4-(trans-4-undecylcyclohexyl) isothiocyanatobenzene, S. Biswas, **S. Haldar**, P. K. Mandal, K. Goubitz, H. Schenk and R. Dabrowski, *Crystal Research and Technology*, Vol. 42, No.10, P. 1029 - 1035, June 2007.
- X-Ray Structural Analysis in the Crystalline Phase of a Nematogenic Fluoro-Phenyl Compound, **S. Haldar**, S. Biswas, P. K. Mandal, K. Goubitz, H. Schenk and W. Haase, *Molecular Crystals and Liquid Crystals*, Vol. 490, P. 80-87, January 2008.
- Novel synthetic route to liquid crystalline 4, 4'-bis (n-alkoxy) azoxybenzenes: spectral characterisation, mesogenic behaviour and crystal structure of two new members, P. Das, A. Biswas, A. Choudhury, P. Bandyopadhyay, **S. Haldar**, P. Mandal and S. Upreti, *Liquid Crystals*, Vol. 35, No. 5, P. 541-548. May 2008.
- X-ray studies of the crystalline and nematic phases of 4'-(3, 4, 5-trifluoro-phenyl)-4-Propylbicyclohexyl, **S. Haldar**, P. K. Mandal, S. J. Prathap, T. N. Guru Row and W. Haase, *Liquid Crystals*, Vol. 35, No.11, P. 1307-1312, November 2008.

- Induction and enhancement of ferroelectric SmecticC\* phase in Multi-Component room Temperature Mixtures, P.K. Mandal, **S.Haldar**, A. Lapanik and W. Haase, *Japanese Journal of Applied Physics*, 48, P. 011501-1-011501-6, January **2009**.
- Structural analysis by X-ray diffraction of a polar mesogen 4-cyanobiphenyl-4'-heptylbiphenyl carboxylate, **S. Haldar**, P.K. Mandal, S. J. Prathap, T. N. Guru Row and R. Dabrowski, *Molecular Crystals and Liquid Crystals*, Vol. 503, P. 99–111, June **2009**.
- Influence of molecular core structure and chain length on physical properties of nematogenic fluorobenzene derivatives, **S. Haldar**, S. Barman, P. K. Mandal, W. Haase and R. Dabrowski, *Molecular Crystals and Liquid Crystals*, Vol. 528, P. 79-93, October **2010**.
- Smectic layer spacing, average intermolecular distance and spontaneous polarization of room temperature FLC mixtures, **S. Haldar**, D. Sinha, D. Goswami, P. K. Mandal, K.C. Dey and A. Lapanik, *Molecular Crystals and Liquid Crystals*, Vol. 547, P. 25-32, June **2011**.
- X-ray diffraction and dielectric spectroscopy studies on a partially fluorinated ferroelectric liquid crystal from the family of terphenyl esters, **S. Haldar**, K.C. Dey, D. Sinha, P. K. Mandal, W. Haase and P.Kula, *Liquid Crystals*, Vol. 39, P. 1196-1203, October **2012**.
- Effect of molecular conformation on the mesogenic properties of a partially fluorinated nematogenic copound investigated by X-ray diffraction and dielectric measurements, **S. Haldar**, D. Sinha, P. K. Mandal, K. Goubitz, H. Schenk, W. Haase *Liquid Crystals*, Vol. 40, P. 689-698, February **2013**.
- Characteristics of equatorial ionization anomaly (EIA) in relation to transionospheric satellite links around the northern crest in the Indian longitude sector, A. Das, K. S. Paul, **S. Halder**, K. Basu, and A. Paul, *Ann. Geophys.*, Vol. 32, 91–97, 2014 12 February 2014.
- Molecular Structure and Packing Analysis of Two Nematogenic Fluoro-Phenyl Compounds in the Crystalline Phase, **Sripada Haldar**, Pradip Kumar Mandal and Wolfgang Haase, *Information Systems Design and Intelligent Applications*, Proceedings of Second International Conference INDIA 2015, Volume 2, January 8-9 2015.

- Influence of fluorination and chain length on the static dielectric properties of nematogenic bicyclohexyl phenyl derivatives, D. Sinha, **S. Haldar** & P. K. Mandal, *Phase Transitions*, Vol. 90 No. 7, 751-761, 2016, December, 2016.
- Response of data driven Artificial Neural Network based TEC models to neutral wind for different locations, seasons and solar activity levels from the Indian longitude sector, D. Sur, **S. Haldar**, S. Ray, A. Paul, *Journal of Geophysical Research Space Physics* Volume 122, Issue 7 Pages: 7713-7733, June , 2017.
- Study of relative performance of different navigational satellite constellations under adverse ionospheric conditions, S. Goswami, A. Paul, **S. Haldar**, *Space Weather* Volume 16, Issue 6 Pages: 667-675, May, 2018.
- SERS study of 1-(CH<sub>2</sub>)<sub>17</sub>CH<sub>3</sub>-2(Phenylazo) imidazole (Pai-C18) and 1-(CH<sub>2</sub>)<sub>17</sub>CH<sub>3</sub>-2(Tolylazo) imidazole (Tai-C18) adsorbed on silver nano particles possessing photoactive liquid crystal properties, Washim Hossain, **Sripada Haldar**, Chittaranjan Sinha and Uttam K Sarkar, *IJMAR* , 2018.
- Morphological and Electrical study of P-type Silicon Nanowires synthesised by Ag-assisted Electroless Chemical Etching Nikita Chhetri, **Sripada Haldar**, Somenath Chatterjee, *Materials Research Express*, Vol. 6, No. 12 , 31 January, 2020
- Effect of  $\gamma$ -irradiation on the display parameters of a room temperature ferroelectric liquid crystal mixture, Asim Debnath, Debarghya Goswami, Biplab Kumar Singha , **Sripada Haldar** and Pradip Kumar Mandal , *Liquid Crystals*, Vol. 40, P. 689-698, October **2020**.
- Dielectric relaxation of some fluorinated bi-cyclohexyl phenyl nematic compounds, **S. Haldar**, W. Hossain, B.K. Singha, D. Sinha and U. K. Sarkar, accepted in *Molecular Crystals and Liquid Crystals*, Nov 2020.

## **Collaboration:**

- **Dabrowski Group**

Institute of Chemistry, Military University of Technology, Warsaw, Poland: **2005 – present.**

- **Haase group**

Darmstadt University of Technology, Germany : **2005 - present.**

## **Individual level**

- **Prof. A.K. Paul**, Institute of Radio Physics and Electronics, University of Calcutta, Calcutta: **2010 – present.**

- **Prof. Somenath Chatterjee**, Centre for Materials Science and Nanotechnology, Sikkim Manipal Institute of Technology, Sikkim Manipal University, Sikkim. **2015 – present.**

- **Dr. U. K. Sarkar**, Department of Physics, Malda College, Malda, West Bengal, **2014 – present.**

### **Training Courses, Faculty Development Programmes:**

<b>Sl.No.</b>	<b>Programme</b>	<b>Duration</b>	<b>Organised by</b>
<b>1</b>	<b>Refresher Course</b>	<b>10.03.2004 to 31.03.2004 (22 Days)</b>	<b>University of North Bengal</b>
<b>2</b>	<b>Refresher course in Experimental physics</b>	<b>09.05.2005 to 22.05.2005 (14 Days)</b>	<b>Indian Academy of Sciences, Bangalore</b>
<b>3</b>	<b>54<sup>th</sup> orientation Programme</b>	<b>06.08.2005 to 02.09.2005 (28 Days)</b>	<b>Academic Staff College, Burdwan University</b>
<b>4</b>	<b>Research Programme</b>	<b>28.09.2007 to 27.10.2007 (30 Days)</b>	<b>Darmstadt University of Technology, Germany</b>
<b>5</b>	<b>Refresher Course</b>	<b>13.07.2009 to 01.08.2009 (21 Days)</b>	<b>Academic Staff College University of Calcutta,</b>
<b>6</b>	<b>Ph. D course work under New Regulation</b>	<b>28.09.2011-15.03.2012 ( 6 Months)</b>	<b>Department of Physics, University of North Bengal</b>
<b>7</b>	<b>Faculty Development Programme</b>	<b>12.09.2012 to 08.10.2012 (27 Days)</b>	<b>Department of Physics, University of North Bengal</b>
<b>8</b>	<b>Refresher Course</b>	<b>21.11.2012 to 11.12.2012 (21 Days)</b>	<b>Academic Staff College University of North Bengal</b>
<b>9</b>	<b>Refresher Course</b>	<b>01.06.2015 to 21.06.2015 (21 Days)</b>	<b>UGC- HRDC Andra University</b>
<b>10</b>	<b>Short Term Course</b>	<b>13.11.2015 to 19.11.2015 (7 Days)</b>	<b>UGC- HRDC University of North Bengal</b>



## Papers presented in Conferences, Seminars, Workshops, Symposia

Sl.No.	Title of the Paper presented	Title of Conference /Seminar	Organized by	Whether international /national /state level
1	3D Structural analysis in the Crystalline Phase of a Nematogen 4-propyl-4'-(3,4-difluorophenyl) bicyclohexane	<b>17<sup>th</sup> Conference on Liquid Crystals, 2007</b>	LC groups from Institute of Applied Physics and Institute of Chemistry Military University of Technology Warsaw – Poland	International
2	Investigation on some nematogenic fluorobenzene derivatives useful for AMLCD	<b>17<sup>th</sup> Conference on Liquid Crystals, 2007</b>	LC groups from Institute of Applied Physics and Institute of Chemistry Military University of Technology Warsaw – Poland	International
3	Effect of molecular conformation on the mesogenic properties of a partially fluorinated nematogenic compound investigated by X-ray diffraction and dielectric measurements	<b>Frontier in Chemistry, 2014</b>	Department of Chemistry, North Bengal University	National
4	Studies on the Mesophases of some Fluoro Phenyl compounds by Optical microscopy, DSC and X-ray Diffraction Method	<b>102<sup>nd</sup> Indian Science Congress, 2015</b>	Indian Science Congress Association	National

<b>5</b>	Molecular structure and crystal structure of two polar mesogenic compounds in the crystalline phase	<b>102<sup>nd</sup> Indian Science Congress, 2015</b>	Indian Science Congress Association	National
<b>6</b>	Molecular structure and packing analysis of two nematogenic fluoro-phenyl compounds in the crystalline phase	<b>2<sup>nd</sup> International Conference on INDIA-2015</b>	Faculty of Engineering, Technology and Management University of Kalyani	International
<b>7</b>	Dependence of physical properties on core structure, chain length and fluorination of some nematogenic fluorobenzene liquid crystals	<b>West Bengal State Science and Technology Congress-2015</b>	Department of Science and Technology, Govt. of W.B. and North Bengal University	State
<b>8</b>	Some room temperature FLC mixture formulation and their characterization	<b>Condensed matter Days, 2015</b>	Department of Physics, Visva-Bharati, Santiniketan	National
<b>9</b>	Investigation of molecular properties of some polar nematogenic fluoro-phenyl compounds useful in LCDs	<b>Eleventh National Conference on Solid State Ionics (NCSSI-11), 2015</b>	Department of Physics Tezpur University, Assam	National
<b>10</b>	Optical Anisotropy and Polarizability Anisotropy study of some Nematogenic Fluorobenzene Liquid Crystal Compounds	<b>103<sup>rd</sup> Indian Science Congress, 2016</b>	Indian Science Congress Association	National

<b>11</b>	Molecular Structure and Packing in the Crystalline State of a Nematogenic Fluoro-phenyl Compound by Single Crystal X-ray Diffractometry	<b>103<sup>rd</sup> Indian Science Congress, 2016</b>	Indian Science Congress Association	National
<b>12</b>	Investigation of molecular associations, static permittivity and dielectric relaxation of a nematic liquid crystal compound	<b>19<sup>th</sup> CRSI National symposium in chemistry-2016</b>	Department of Chemistry, North Bengal University	National
<b>13</b>	Investigation of static dielectric properties of some nematic compounds	<b>104<sup>th</sup> Indian Science Congress, 2017</b>	Indian Science Congress Association	National
<b>14</b>	Molecular associations, static permittivity and dielectric relaxation study of a fluorobenzene derivative	<b>104<sup>th</sup> Indian Science Congress, 2017</b>	Indian Science Congress Association	National
<b>15</b>	Investigation of relaxation phenomena of some bi-cyclohexyl phenyl nematic compounds	<b>106<sup>th</sup> Indian Science Congress, 2019</b>	Indian Science Congress Association	National