

Bio-data including research experience/interests and publications

(Updated on 11th Feb, 2026)

1. Name: DR SYED ARSHAD HUSSAIN

2. Designation: Professor
Department of Physics
Tripura University (A Central University)
Agartala, Tripura, India



Professional Positions:

- Full Professor: 14.06.2019 to till date (TU)
- Associate Professor (Stage-IV): 14.06.2016 to 13.06.2019 (TU)
- Assistant Professor (Stage-III): 14.06.2013 to 13.06.2016 (TU)
- Assistant Professor (Stage-II): 14.06.2008 to 13.06.2013 (TU)
- Visiting Scientist: 20.07.2007 to 03.08.2008 (K. U. Leuven, Belgium)
- Assistant Professor (Stage-I): 14.06.2004 to 13.06.2008 (TU)
- In May, 2018 Selected as full Professor at Jamia Millia Islamia, New Delhi, India ([Download](#))
- In August, 2025 Selected as full Professor at King Saud University (Saudi Arabia) ([Download](#))

3. Institution: Tripura University (A Central University)

4. Date of Birth: 05.12.1975

5. Mailing Address:

Department of Physics
Tripura University (A Central University)
Suryamaninagar – 799022
Agartala, Tripura, India

Dr. Syed Arshad Hussain

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Website: <https://sahussaintu.wordpress.com/>
<https://tripurauniv.ac.in/site/index.php/en/faculty-physics-syed-arshad-hussain-en>

6. Qualification: M.Sc. Physics (Electronics) Ph.D. (Thin films)

Ph.D. thesis title: Photophysical studies of organized molecular assemblies in Langmuir-Blodgett Films

Postdoctoral Research: (29.07.2007 to 03.08.2008)

Center for Surface Science & Catalysis
Department of Microbial & Molecular System
K. U. Leuven, Leuven, Belgium

7. Field of Specialization: Materials Science (Thin films & Nanoscience)

Research Interest:

- Organic memory for WROM, RAM, CRS applications towards sustainable organic electronics
- Brain-inspired computing / Neuromorphic device

- Optical switchable thin films for naked eye colorimetric sensors (bio-sensors / chemical sensors) applications
- Volta-metric sensors
- Fluorescence Resonance Energy Transfer (FRET) & its applications
- Nano-scale aggregates in ultra-thin films & their applications towards optoelectronics devices

8. Teaching Experience: 22 Years

9. Research Experience: 24 Years

10. Total Research grant obtained: 516.7 lakhs (list given in Annexure-A)

11. Particulars of Guiding Research:

- (i) No. of candidates who have been awarded the Ph.D: **13** (list given in Annexure-B)
- (ii) No. of candidates presently working for Ph.D.: **06** (list given in Annexure-B)
- (iii) No. of candidates who have awarded the M.Phil: **03** (list given in Annexure-B)
- (iv) No. of candidates who have pursued postdoctoral research: **03** (list given in Annexure-B)

12. Publications

Total citation: 2726; h – index: 28; i10 index: 76

(Ref: <https://scholar.google.co.in/citations?user=aFaX6hcAAAAJ&hl=en>)

- i. Research Papers (in Journals): **173** (Review article: **06**) (list given in Annexure-C)
- ii. Research Papers (In Conference Proceedings) : **23** (list given in Annexure-D)
- iii. Paper presented in seminar/conference: **89** (Invited Talks: **51**) (list given in Annexure-E)
- iii. Books authored / edited: **10** (list given in Annexure-F)
- iv. Edited special issues in journals: **09** (list given in Annexure-G)

13. Patents granted: 06

1) Australian Innovation Patent granted 11.05.2022 (Patent No: 2021104639)

Title: A Process for Preparation of a Clay Mineral – Organic Hybrid

Download the certificate:

<https://thinfilmlabtu.files.wordpress.com/2022/05/2021104639-innovation-patent-certificate.pdf>

2) German patent application granted on 16.08.2022: (Patent No. 202022103887)

Title: A Device For Fabricating Indole Derived Films To Obtain Resistive Switching Module

Download the certificate:

<https://sahussaintu.files.wordpress.com/2022/10/grant-certificate-g11660de-certificate.pdf>

3) German patent application granted on 28.03.2023: (Ref No. 202022107204)

Title: Film for colorimetric sensing of volatile organic compounds (VOCs), gasoline and pollution in car exhaust

Download the certificate:

<https://sahussaintu.files.wordpress.com/2023/04/g11934decertificate.pdf>

4) German patent application granted on 28.09.2023: (Ref No. 202023105125)

Title: Resistive Switching Behavior System Employing Ipomea Carnea Plant for Fabricating Biodegradable Re-Writable Read Only Memory

Download the certificate:

<https://sahussaintu.files.wordpress.com/2023/11/g12373de-certificate-farhana.pdf>

5) UK Design Patent (Design number: 6491644 | Date of grant: 29.12.2025 | Date of registration: 10.12.2025)

Title: Biogenic Silver Nanoparticle – Polydiacetylene Color Sensor for Pesticide

Download the certificate:

https://sahussaintu.wordpress.com/wp-content/uploads/2026/02/grant-certificate_app-no.6491644.pdf

6) German Patent (Patent No. 20 2025 104 443 | Date of grant: 21.08.2025 | Date of filing: 30.07.2025)

Title: A System for fabricating natural plant – material based memory devices

Download the certificate:

<https://sahussaintu.wordpress.com/wp-content/uploads/2025/10/no-5-g25524de-certificate.pdf>

14. Editorial experience

- i. a. Editorial Board Member of **Applied Clay Science** (Elsevier; IF = 4.605) (2014 – June, 2022)
- b. Editorial Board Member of **Heliyon** (Elsevier, IF = 1.65) (June, 2018 – 2024)
- c. Editorial Board Member of **Recent patents on Nanotechnology** (Bentham Science; Impact Factor = 1.475) (June, 2019 onwards)
- d. Editorial Board Member **Micro and Nanosystem** (Bentham Science) (June, 2019 onwards)
- e. Editorial Board Member of **Nanoscience & Nanotechnology-Asia** (Bentham Science) (June, 2019 onwards)
- f. Associate Editor of **Frontiers in Nanotechnology** (Frontiers, IF=4.2) (2023 onwards)
- g. Editorial Board Member of **Discover Physics** (Springer) (2025 onwards)
- h. Editorial Board Member of **Applied Nanoscience** (Springer) (2025 onwards)

Edited special issues in journals: 09 (list given in Annexure-G)

15. Organizational experience

List of Seminar/Conf. etc organized:

1. **Convener** of the Fourth International Conference on Material Science (ICMS2024) organized by the Department of Physics, Tripura University during 31 Jan – 2nd Feb, 2024
2. **Coordinator** of the AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on FUNDAMENTALS OF THIN FILM PREPARATION & CHARACTERIZATION TECHNIQUES organized by Department of Physics, Tripura University during 19-23, September., 2022.
3. **Convener** of XII Biennial National conference of Physics Academy of the North East (PANE), organized by Department of Physics, Tripura University during 15-17 December, 2021

- 4. Coordinator** of the ONLINE LIVE YOGA session on Sahaj Yoga organized by Tripura University Alumni Association (TUAA) on 17.09.2021.
- 5. Coordinator** of the AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Progress in Novel two Dimensional Material organized by Department of Physics, Tripura University during 04-08, October., 2021
- 6. Coordinator** of the AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Fundamentals of Novel Material organized by Department of Physics, Tripura University during 24-28, August., 2021.
- 7. Co-Host** of the UGC-CSR awareness meeting held on 06.08.2021 at Department of Physics, TU.
- 8. Organizing Secretary** of the ALUMNI MEET (REUNION) of “Tripura University Alumni Association (TUAA)” organized by Tripura University Alumni Association (TUAA) on 12.02.2021.
- 9. Convener** of the 3rd Webinar on “The Challenges of Online Education in India” organized by Tripura University Alumni Association (TUAA) on 21st january, 2021.
- 10. Convener** of the Distinguished Lecture (Webinar) on “Voyage through space and time: study of elementary events at small scales” organized by Department of Physics, Tripura University on 22nd December, 2020.
- 11. Convener** of the 2nd Webinar on “Mental Health and COVID19” organized by Tripura University Alumni Association (TUAA) on 8th October, 2020.
- 12. Coordinator** of the AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Sensor Technology organized by Department of Physics, Tripura University during 21-25, Sept., 2020.
- 13. Convener** of the Third International Conference on Material Science (ICMS2020) organized by the Department of Physics, Tripura University during 04-06 March, 2020.
- 14. Coordinator** of the Workshop on “Recent Trends of Microscopy: Light to Electron Microscopy & Digital Image Analysis”.
19-20 September, 2019 Jointly organized by Central Instrumentation Center, Tripura University and Zeiss India
- 15. Coordinator** of the Science Academy’s three-day workshop on “Thin Films & Nanomaterials: Principles and Applications” during 26th to 28th March, 2018 held at Department of Physics, Tripura University.
- 16. Coordinator** of the program “Meet the Scientist” held on 10th January, 2018, jointly organized by Department of Physics, TU and State Council of Science & Technology, Govt. of Tripura.
- 17. Convener** of the Second International Conference on Material Science (ICMS2017) organized by the Department of Physics, Tripura University during 16 – 18 rd February, 2017. . (No of participants were more than 300 including 21 from outside India).
- 18. Course Coordinator** of two week Refresher Course on Thin films and Nanoscience at Tripura University during 04 – 18 May, 2015. (This is the first refresher course held at Tripura University since the University doesn’t have Academic Staff College)

19. Convener of the International Conference on Material Science (ICMS2013) organized by the Department of Physics, Tripura University during 21 – 23 rd February, 2013. (No of participants were more than 250 including 17 from outside India).

20. Organizing Secretary of the Conference on Recent Trends of Research in Physics organized by the Department of Physics, Tripura University during 3-4 th February, 2012.

21. Convener of the Seminar on condensed Matter Physics (SCMP 2010), held at the Department of Physics, Tripura University, Suryamaninagar – 799130, Tripura (West), on 16th February, 2010.

22. Joint convener of VIth National Conference of Physics Academy of North-East (PANE-2009), at the Department of Physics, Tripura University, Suryamaninagar – 799130, Tripura (West), during 3-4th April, 2009.

23. Organizing Secretary of Reunion-2007 of Department of Physics, held on 6th May 2007

16. Award / Distinction Earned:

1. Nominated as the Board Member of Indian Council of the International Association of Advanced Materials (IAAM) (2024)

2. Faculty Recognition by Tripura University for academic achievement (2021). Tripura University honoured with certificate and medal to recognize the academic achievements on 15th August, 2021

3. Ranked 2nd by Indian Researchers Information Network System (2020-till date). According to Indian Researchers Information Network System (IRINS), NME ICT, Govt of India Dr. S. A. Hussain ranked second among all Tripura University faculty members based on research and academic output

4 Visiting Post Doctoral Fellow (2007-08), K. U. Leuven, Belgium.

5. Selected to attend the Science Conclave: A Congregation of Nobel Prize Winners, Indian Institute of Information Technology, Allahabad, Dec., 15-21, 2008.

6. Jagadish Chandra Bose Award-2009 by Govt. of Tripura, India.

7. DST-Young Scientist Research Award by Department of Science & Technology, Govt. of India.

8. DAE-Young Scientist Research Award (2009-12) by Department of Atomic Energy, Govt. of India.

9. Felicitation by State Journalist Forum, Tripura India

10. Best paper presentation award in International Conference on Emerging Areas of Chemistry -2011 organized by Department of Chemistry, Tripura University during 9-11 Jan, 2011.

11. Visiting Scientist (May, 2011 to July, 2011), K. U. Leuven, Belgium.

12. Felicitation by Asiatic Society of Bangladesh during 28-29 Oct., 2011.

13. “Bharat Jyoti Award” (2011) by “The India International Friendship Society”, New Delhi, India.

14. “Rasthriya Vidhya Samman Puruskar” (2012) by EGSI, New Delhi, India.

15. Invited to visit Yamaguchi University, Japan during Nov-Dec, 2013 as a part of Cooperative Science Program of Yamaguchi University, Japan.

16. Invited to visit Osaka University during Nov-Dec, 2013 as a part of Cooperative Science Program of Osaka University, Japan.

17. Ongoing Research Collaboration:

In India:

- i. Dr. Pabitra Kumar Paul, Department of Physics, Jadavpur University, Kolkata, India
- ii. Prof. D. K. Aswal, Head, Thin Films Devices Section, Technical Physics Division, Bhabha Atomic Research Center (BARC), Mumbai.
- iii. Prof. Swapan Majumdar, Department of Chemistry, Tripura University
- iv. Prof. Dilip Maiti, Department of Chemistry, University of Calcutta
- v. Dr. Hemen K. Kalita, Department of Physics, Gauhati University

Outside India:

- i. Prof. Robert A. Schoonheydt, Centre for Surface Chemistry and Catalysis, K. U. Leuven, Belgium.
- ii. Prof. Prof. Abdullah N. Alodhayb, Surface & Interface Science, Department of Physics & Astronomy King Saud University, Saudi Arabia
- iii. Prof. Jun Kawamata, School of Chemistry, Yamaguchi University, Japan.
- iv. Prof. Takuya Matsumoto, Graduate School of Engineering, Osaka University, Japan.
- v. Prof. Mohamed Mehdi CHEHIMI, Leader of the Surface & Interface research team, Université Paris, France.

18. Research facility developed at Thin film & Nanoscience Lab, Tripura University

Instruments for Thin Film Preparation:

- i. Fluorescence Imaging Microscope attached with Langmuir-Blodgett film deposition instrument (Apex Instruments, India)
- ii. Brewster Angle Microscope attached with Langmuir Trough (Accurion, Germany)
- iii. Langmuir-Blodgett film deposition instrument (Apex Instruments, India)
- iv. Automatic computer controlled Dip coater (Apex Instruments, India)
- v. Programmable Spin Coater (Apex Instruments, India)
- vi. Vacuum deposition unit (HindHiVac)

Instruments for Characterizations:

- i. Atomic Force Microscope (Inova, Bruker)
- ii. Fluorescence spectrophotometer (Perkin Elmer)
- iii. UV-Vis absorption spectrophotometer (Perkin Elmer)
- iv. UV-Vis absorption spectrophotometer (Shimadzu)
- v. FTIR Spectrophotometer (Perkin Elmer)
- vi. Millipore water purification system (Millipore)
- vii. Keithley source meters (constant current source, nano- voltmeter, I-V source meter)
- Vii. Electrochemical Workstation (ChorTest)

Others

- > Sample Chamber for measuring electric property in vacuum.
- > Ultrasonic water bath (two number)
- > Digital temperature controller (three numbers)
- > Magnetic stirrer (two numbers)
- > Distil water plant (3 number)
- > Standard glass ware and chemicals

(<https://sahussaintu.wordpress.com/research-facility/>)

19. Research facility developed at Central Instrumentation Centre (CIC), Tripura University

Working as the **Coordinator** of the Central Instrumentation Center (CIC) since the inception of the center in 2016 to till date.

Research Facility developed at the centre:

1. Atomic Force Microscope (AFM), (INOVA, Bruker)
- Field Emission Scanning Electron Microscope with EDS & Sputter Coater, (Sigma 300, Carl Zeiss)
2. 400 MHz NMR (Bruker)
3. Liquid Nitrogen Plant, (StirLITE, Stirling Cryogenics)
4. GCMS (Gas Chromatography-Mass spectrum) instruments (Varian 220-MS / 450-GC, Agilent)
5. High performance liquid chromatography (HPLC) (Dionex U3000)
6. GSV4004B GPS Ionospheric Scintillation & TEC Monitor (GISTM)
7. Lifetime Spectrofluorometer, (FluroLog-3, Horiba)
8. CHEMIDOC
9. Immunofluorescence Microscope (Carl Zeiss)

For more details about center: <https://www.tripurauniv.ac.in/Page/InstrumentationCentre>

20. Administrative activities:

- I. Director, Research & Development Cell, Tripura University (2nd May, 2026 – current)
- II. Coordinator of Central Instrumentation Centre (CIC), TU (9th Dec., 2016 – current)
- III. Head, Department of Physics, TU (Jan, 2022 – Jan., 2025)
- IV. Member of Academic Council, TU (2014 – 2017)
- V. Member of Faculty Council, TU (2005 – 2007)
- VI. Secretary of Tripura University Alumni Association (TUAA) (2013 – 2022)
- VII. Joint Secretary of Physics Academy of North East (PANE) (2022 – 2024)
- VIII. Vice President of Physics Academy of North East (PANE) (2024 – 2026)
- IX. Chairman, Board of PG Studies of Physics, TU (2022 – 2024)
- X. Chairman, Board of UG Studies of Physics, TU (2022 – 24)
- XI. Chairman Syllabus Framing Committee as per NEP – 2020
- XII. Life member of INSA, MRSI, IPAT, ANS, AGU, ACS, APS
- XIII. Expert committee member to inspect various colleges under TU
- XIV. Coordinator, Research Program & Policy Development, RDC, TU (2024-2026)

21. Reviewer of the journals:

ACS Journals: Langmuir, Journal of Physical Chemistry B & C, Macromolecules etc

Elsevier Journals: Spectrochimica Acta A, Applied Clay Science, Sensors & Actuators A & B, Journal of Luminescence, Helyon, Journal of Physics & Chemistry of Solids, Thin Solid Films, Chemical Physics Letters, Trends in Analytical Chemistry etc

Annexure-A

Total Research Grant: Rs. 516.7 lakhs

Ongoing Projects:

Project title: Development of low -cost and flexible artificial visual perception system utilizing biopolymer memristors

Funding agency: ANRF, Govt. of India (2024-27) [Project No. TAR/2023/000365]

Sanctioned amount: Rs 18.3 lakhs

Project title: Study of optical, electrical and electrochemical properties of some organic molecules suitable for Organic Electronics devices

Funding agency: CSIR, Govt. of India (2023-26) [Project No. 22738]

Sanctioned amount: Rs 31 lakhs

Project title: Study of chromatic response of Polydiacetylene (PDA) and demonstration of its application towards designing low cost colorimetric sensors.

Funding agency: UGC-DAE CSR, Govt. of India (2023-25) [Ref. CRS/2022-23/1084]

Sanctioned amount: Rs 4.56 lakhs

Project Title: Switching and memory applications of organic molecules, organo-clay and organic-inorganic hybrids assembled onto thin films

Funding agency: SERB-DST, Govt. of India (Ref. [CRG/2021/004073](#) dated 28.01.2022)

Sanctioned amount: Rs. 40.02 lakhs (2022-2025)

Project completed as Principal Investigator:

1) Project Title: Photo-physical studies of some molecules in solution, bulk and ultrathin films in presence and absence of nano-clay: investigations of fluorescence resonance energy transfer and sensor application.

Sanctioned amount: Rs. 30.4 lakhs (2016 – 2019)

Funding agency: DST, Govt of India (Ref. No. EMR/2014/000234; dt 17.03.2015)

2) Project Title: Fabrication and characterizations of ultrathin films obtained by molecular self assembly method through electrostatic interactions.

Funding agency: DST, Govt of India (Fast Track Scheme for Young Scientist) (Ref. No. SE/FTP/PS-54/2007)

Total grant: Rs. 13.74 lakhs (2010 – 2014)

3) Project Title: Investigations of molecular organization in nano-dimensional organo-clay mono- and multilayer hybrid films fabricated by Langmuir-Blodgett and Layer-by- Layer Self assembled technique.

Funding agency: CSIR, Govt of India (Ref. 03(1146)/09/EMR-II dt 12/11/2009).

Total grant: Rs. 22 lakhs (2009 – 2014)

4) Project Title: Investigations of the organizations and morphology of nano-dimensional organo-clay hybrid Langmuir-Blodgett (LB) films.

Funding agency: DAE, Govt of India (DAE Young Scientist Research Award -2009) (Ref. No. 2009/20/37/8/BRNS/3328 dt 9/3/2010)

Total grant: Rs. 15.33 lakhs (2010 – 2013)

5) Project Title: Photophysical studies of organized molecular assemblies in Langmuir-Blodgett Films.

Funding agency: UGC, Govt of India (minor research project)

Total grant: Rs. 0.35 lakhs (2004-2005)

As Co-Principal Investigator:

1) Project Title: Morphological and photophysical investigations of Langmuir and Langmuir-Blodgett films

Funding agency: DST, Govt of India (Ref No: SR/S2/LOP-19/07)

Total grant: Rs. 19.64 lakhs (2008-2012)

2) Project Title: Photophysical investigation of stable Langmuir-Blodgett films of organic, polymeric and water soluble materials

Funding agency: CSIR, Govt of India (Ref. Ref. No.03 (1080)/06/EMR-II)

Total grant: Rs. 7.5 lakhs (2007-2010)

As Program Coordinator / Deputy Coordinator:

Project Title: Financial support under “Fund for Improvement of S&T infrastructure in universities & higher educational institutions (FIST)”.

Funding agency: DST, Govt. of India (Ref. No. SR/FST/PSI-191/2014)

Sanctioned amount: Rs. 175 lakhs (2014-2019)

Project Title: “Financial support under Special Assistance Program of UGC” with thrust area “Thinfilim and Nanoscience”.

Funding agency: UGC, Govt. of India (Ref. No F.530/23/DRS-I/2018 (SAP-I) dated 24.04.2018)

Sanctioned amount: Rs. 108.50 lakhs (2016-2021)

Funding received for other purposes

Faculty Development Program (FDP) under the scheme AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Progress in Novel two Dimensional Material organized by Department of Physics, Tripura University during 04-08, October., 2021.

Funding Agency: AICTE, Govt. of India

Ref. No. 01/AICTE/ATAL-HQ/2021-22/1614168301 date 15.06.2021

Sanctioned amount: Rs. 0.93 lakhs

PI: Dr. Syed Arshad Hussain

Faculty Development Program (FDP) under the scheme AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Fundamentals of Novel Material organized by Department of Physics, Tripura University during 24-28, August., 2021.

Funding Agency: AICTE, Govt. of India

Ref. No. 01/AICTE/ATAL-HQ/2021-22/1613713379 date 15.06.2021

Sanctioned amount: Rs. 0.93 lakhs

PI: Dr. Syed Arshad Hussain

Faculty Development Program (FDP) under the scheme AICTE Training and Learning (ATAL) Academy
Faculty Development Program (FDP) on “Sensor Technology” during 21-25 September, 2020 held at
Department of Physics, Tripura University (A Central University)

Funding Agency: AICTE, Govt. of India

Ref. No. 01/AICTE/ATAL-HQ/2020-21/1583935067 dated 12.08.2020

Sanctioned amount: Rs. 0.93 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Third International Conference on Material Science (ICMS2020) during 04-06 March,
2020 held at Dept. of Physics, TU

Funding Agency: UGC, Govt. of India

Ref. No. No F.530/23/DRS-I/2018 (SAP-I) dated 24th April, 2018

Sanctioned amount: Rs. 2 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Third International Conference on Material Science (ICMS2020) during 04-06 March,
2020 held at Dept. of Physics, TU

Funding Agency: SERB-DST, Govt. of India

Ref. No. SSY/2019/001030 dated 04 November, 2019

Sanctioned amount: Rs. 1.5 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Third International Conference on Material Science (ICMS2020) during 04-06 March,
2020 held at Dept. of Physics, TU

Funding Agency: DRDO, Govt. of India

Sanctioned amount: Rs. 0.80 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Third International Conference on Material Science (ICMS2020) during 04-06 March,
2020 held at Dept. of Physics, TU

Funding Agency: INSA, Govt. of India

Ref. No. SP/C-Feb-52/2-19-20 dated 27 Feb., 2020

Sanctioned amount: Rs. 0.50 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Science Academy's three-day workshop on “Thin Films & Nanomaterials: Principles
and Applications” during 26 to 28 March, 2018

Funding Agency: Joint Science Education Panel, Indian National Science Academy, Govt. of India

Ref. No. IASc/SEP/LW/March/2018 dated 2nd February, 2018

Sanctioned amount: Rs. 2.05 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Second International Conference on Material Science (ICMS2017) during 16-18,
Feb. 2017 held at Dept. of Physics, TU

Funding Agency: SERB-DST, Govt. of India

Ref. No. SB/SS/1129/16-17 dated 21 November, 2016

Sanctioned amount: Rs. 1.5 lakhs

PI: Dr. Syed Arshad Hussain

Funding for organizing Second International Conference on Material Science (ICMS2017) during 16-18,
Feb. 2017 held at Dept. of Physics, TU

Funding Agency: DRDO, Govt. of India

Ref. No. ERIP/ER 16-17/C/181 dated 30 Jan., 2017
Sanctioned amount: Rs. 1.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing Second International Conference on Material Science (ICMS2017) during 16-18, Feb. 2017 held at Dept. of Physics, TU
Funding Agency: CSIR, Govt. of India
Ref. No. SYM/8845/16-HRD Dated 28 Sept., 2016
Sanctioned amount: Rs. 0.50 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing Second International Conference on Material Science (ICMS2017) during 16-18, Feb. 2017 held at Dept. of Physics, TU
Funding Agency: INSA, Govt. of India
Ref. No. SYM SP/C-57/2016 – 17 Dated 06 Oct., 2016
Sanctioned amount: Rs. 0.30 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing Second International Conference on Material Science (ICMS2017) during 16-18, Feb. 2017 held at Dept. of Physics, TU
Funding Agency: BRNS, Govt. of India
Ref. No. 2016063700SYMP03246-BRNS Dated 06 Oct., 2016
Sanctioned amount: Rs. 1.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing Science Academies' Refresher Course on "Thin films and Nanoscience" during 4 – 18 th May, 2015
Funding Agency: Joint Science Education Panel, Indian National Science Academy, Govt. of India
Ref. No. SEP/RC-May-1/2015-16 dated 9th Dec., 2014
Sanctioned amount: Rs. 6,36,750 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: BRNS, Govt. of India
Ref. SYM/7309/12-HRD, July, 27, 2012
Sanctioned amount: Rs. 2.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: CSIR, Govt. of India
Ref. SYM/7309/12-HRD, July, 27, 2012
Sanctioned amount: Rs. 2.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: DBT, Govt. of India
Ref. DBT/CTEP/01/201200584 Dated 18 July, 2012
Sanctioned amount: Rs. 2.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: DRDO, Govt. of India
Ref. ERIP/ER12 – 13/C/313 dated 19 Dec 2012
Sanctioned amount: Rs. 0.75 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: DST, Govt. of India
Ref. SERB/F/4426/2012-13 dated 07.11.2012 & SR/SS/882/12-13; Dated :16/11/2012
Sanctioned amount: Rs. 2.0 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: INSA, Govt. of India
Ref. No SP/C-42/2012/1657 dated 04.10.2012
Sanctioned amount: Rs. 0.40 lakhs
PI: Dr. Syed Arshad Hussain

Funding for organizing First International Conference on Material Science (ICMS2013) during 21-23, Feb. 2013 held at Dept. of Physics, TU
Funding Agency: MoES, Govt. of India
Ref. No MoES/SSWC/74/2011/PC5
Sanctioned amount: Rs. 0.80 lakhs
PI: Dr. Syed Arshad Hussain

Annexure-B

Research guidance

No. of Ph.D. awarded: **13**

Ongoing Ph.D. scholars: **06**

Postdoctoral Scholars: **02**

M.Phil. awarded: **03**; M.Sc. Dissertation: **44**

List of awarded students:

Sl. No.	Name of the candidate	Title of the thesis	Year of award
01.	Dr. Dhananjay Dey TU/REG/PhD/10(12-2)2008 dated 03.01.2008	Spectroscopic characterizations of organized Molecular Assemblies in Ultra thin films fabricated by Layer-by-Layer (LbL) self assembled Technique.	2012
02.	Dr. Md. N. Islam No.F.TU/REG/Ph.D/10 (12-4)08 dated 08.04.2008	Photo physical characterizations of organized molecular assemblies in ultrathin films fabricated by Langmuir-Blodgett (LB) and Layer by Layer (LbL) self assembled (SAM) techniques.	2013
03.	Dr. Sekhar Chakraborty F.TU/REG/Ph.D/10(12-11)/10; Dated 01.10.2010	Investigations of molecular and particulate Organization in hybrid organo-clay mono and multilayer films.	2013
04.	Dr. Santanu Chakraborty F.TU/REG/Ph.D/10/(12-13)11 Dated 26.07.2011	Spectroscopic characterizations of some organic molecules in presence and absence of nano-dimensional clay sheets in restricted geometry of ultra-thin films.	2015
05.	Dr. Dibyendu De F.TU/REG/Ph.D/10/(12-14)11, dated: 26/07/2011	Investigation of Fluorescence Resonance Energy Transfer (FRET) among dyes in solution and ultra-thin films.	2015
06	Dr. Arpan Datta Roy F/TU/COE/Ph.D/10/PHS/04/14, dated: 13/05/2014	Fluorescence resonance energy transfer in presence of biological molecules.	2018
07	Dr. Jaba Saha F/TU/COE/Ph.D/10/PHS/05/14, dated 13/05/2014	Study of fluorescence resonance energy transfer and its sensing applications .	2018
08	Dr. Bapi Dey F/TU/COE/PhD/10.PHS/11/15 Dated 07.08.2015	Electrical and optical characterizations of some organic molecules assembled onto ultra thin films	2019
09	Dr Pintu Debnath F/TU/COE/Ph.D/10/PHS/09/14, dated 24/11/2014	Study of molecular aggregates of cyanine dyes in ultra-thin films	2019

10	Dr. Sudip Suklabaidya F/TU/COE/Ph.D/10/PHS/14/17, dated: 18/10/2017	Investigations of Polydiacetylenes assembled onto Langmuir and Langmuir – Blodgett Films	2021
11	Dr. Surajit Sarkar F/TU/COE/Ph.D/10/PHS/24/20, dated: 18/10/2017	Studies on the opto-electronic behaviour of indolyl derivatives assembled onto thin films for memory applications	2021
12	Dr. Hritinava Banik F/TU/COE/Ph.D/10/PHS/31/21, dated: 30/06/2021	Study of resistive switching phenomenon for biodegradable and transient memory applications	2025
13	Dr. Farhana Yasmin Rahman F/TU/COE/Ph.D./10/PHS/14/22 14.09.2022	Investigation of resistive switching phenomena in natural plant extracts assembled onto thin films	2025

List of ongoing Ph.D. students:

Sl. No.	Name	Topic of their research	status
01	Mr. Shazidul Hussain	Tuning phase behavior and chromatic response of Polydiacetylene for sensing applications	Registered F/TU/COE/Ph.D./10/PHS/14/22 14.09.2022 (Thesis submitted)
02	Mr. Rahul Deb	Electrical and optical characterization of pi-electron rich indole and coumarin derivatives for device applications	Registered F/TU/COE/Ph.D./10/PHS/14/22 14.09.2022
03	Ms. Sangita Majumdar	Development of Optical Sensors for Analytical Applications	Registered F/TU/COE/Ph.D./10/PHS/43/24 21.01.2026
04	Ms. Debjani Chakraborty	Electrical characterization of plant extract for memristive application.	Registered F/TU/COE/Ph.D./10/PHS/44/26 21.01.2026
05	Ms. Swagota Gautam	Electrical and Electrochemical characterization of some organic molecules for electronic device applications	Registered F/TU/COE/Ph.D./10/PHS/47/24 22.01.2026
06	Mr. Ankur Debnath	Neuromorphic devices using resistive switching	Course work going on

List of Postdoctoral candidates:

Dr. M. Raveendra Kiran

Associate Professor

Department of Physics,

ITRH, Presidency University,

Bangalore, 560064

Under the SERB-TARE Scheme (2024-27)

Ref. No TAR/2023/000365 dated 13th July, 2024

Dr. S. Chakraborty

CSIR – Research Associate (2017 -2020)

Ref: 09/714(0017)/216-EMR-I dated 31-03-2017

Dr. J. Saha

DST - Woman Scientist (2017-2019)

Ref: SR/WOS-A/PM-78/2016

List of students awarded M.Phil:

Sl. No.	Name	Topic of their research	status
01	Ms. Namita Das	Photophysical Characterizations of Organized Molecular Assemblies of Pyrene in Mixed LB Films	Awarded in 2007
02	Mr. Shirshendu	Optical characterizations of ultrathin films fabricated by Layer by Layer (LbL) technique	Awarded in 2007
03	Ms. Nabanita Chackraborty	Spectroscopic characterizations of self assembled films of rosebengal	Awarded in 2007

Annexure-C

Research Papers (in Journals): **172** (Review article: **06**)

Research Papers (In Conference Proceedings): **23**

Total: 193

List of publications in peer reviewed journals

[<https://sahussaintu.wordpress.com/publications/>]

2026

172. Integrated Digital and Analog Resistive Switching in a Bis-Indolyl DerivativeBased Memristor for Artificial Synaptic Applications

Deb, Rahul; Majumdar, Swapan; ALIBRAHIM, KHULOUD A.; Alodhayb, Abdullah; Bhattacharjee, Debajyoti; **Syed Arshad Hussain***

Journal of Materials Chemistry C (accepted) <https://doi.org/10.1039/d6tc00569a>

171. Towards Reliable Bio-RRAM: UV-Induced Variability Mitigation in Mucuna imbricata Leaf Extract-Based Memory Devices

Chakraborty, Debjani; Deb, Rahul; Rahman, Farhana Yasmin ; Uddin, Md. Jashim; Acharya, Pratap Chandra; Bhattacharjee, Debajyoti; Alruwaili, Maha; Alibrahim, Khuloud; **Syed Arshad Hussain***

ACS Sustainable Chemistry & Engineering (ACS, IF=7.1) (Submitted)

170. Synthesis of multifunctional biogenic AgNPs from Terminalia bellirica and their application towards Antibacterial, antioxidant activity, mercury sensing and dye degradation

Dipan Sarma, Mayuri Bhagawati, Santanu Chakraborty, Badal K. Datta, Ajay K. Saha¹, Mohammad Oves, **Syed Arshad Hussain***

ACS Omega (American Chemical Society) (Accepted)

169. Ni(OH)₂/ZnO/g-C₃N₄ electrochemical sensor for dimetridazole detection in food matrices

Farhana Y. Rahman, Krishnapandi Alagumalai, Syed Arshad Hussain*

Chemical Engineering Journal (Elsevier, IF=13.2) (submitted)

168. In-plane Impedance Spectroscopic Analysis of PEDOT:PSS Thin Films: Channel Length and Bias Voltage Dependence

Raveendra Kiran, Hemant Agarwal; Sharath P; Hidayath Ulla; Dibya Yadav; **Syed Arshad Hussain**
Manuscript under preperation

167. Emulation of Synaptic Functions for Artificial Neural Networks Using PRSS-Based Organic WORM Resistive Memory

Das, Shaikat; Naha, Koshik; Bhattacharjee, Shyam Kumar; **Syed Arshad Hussain**; Bhattacharjee, Debajyoti

ACS Applied Engineering Materials 4 (2026) 1915-1924 (ACS, IF=3.5)

166. Surface Functionalized Vapor Grown Carbon Fiber Supported Dysprosium Stannate

Composites for the Enhanced Detection of Furaltadone: A Synergy of DFT Modeling and Experiment

Rahman, Farhana Yasmin, Surya, Rajendran, Katin, Konstantin, Yin, Shu, **Syed Arshad Hussain**, Sakthinathan, Subramanian, Chiu, Te-Wei

Journal of Materials Chemistry A (RSC, IF= 9.5) (Submitted)

165. Casein Protein for Electronic Device Applications: A Comprehensive Review

M. Raveendra Kiran, Hemant Agarwal; Sharath P; Hidayath Ulla; Dibya Yadav; **Syed Arshad**

Hussain

Submitted to Journal of Environmental Chemical Engineering (Elsevier, IF=7.2)

164. Polydiacetylene Materials Beyond Sensing with Emerging Applications in Biomedical, Catalysis, Optics and Energy

Shazidul Hussain, Sangita Majumder, D. Bhattacharjee, **Syed Arshad Hussain***

ChemPlusChem (Wiley, IF=2.8) (Accepted)

163. Deep Eutectic Solvent Mediated Synthesis of Ruddlesden Popper Phase La_2NiO_4 Adhered with rGO Nanosheets for the Detection of Ethyl Parathion in Food Samples with DFT Simulations

Rahman, Farhana Yasmin ; R. Surya; Sakthinathan, Subramanian; Majumder, Sangita; **Syed Arshad Hussain***; Chiu, Te-Wei; Govindasamy, Mani

Journal of Materials Chemistry C (RSC, IF= 5.2) (accepted)

162. Influence of Subphase Parameters and Spreading Conditions on Interfacial Aggregation Behaviour of a New Amphiphilic Dimeric Mesogen

Sutapa Deb; Banti Baishya; Shazidul Hussain; **Syed Arshad Hussain**; Arghyadeep Bhattacharyya; Ranendu Kumar Nath; Manoj Kumar Paul

Journal of Physics and Chemistry of Solids 211 (2026) 113460 (Elsevier, IF= 4.9)

161. Synthesis of multifunctional biogenic AgNPs from Terminalia bellirica and their application towards Antibacterial, antioxidant activity, mercury sensing and dye degradation

Dipan Sarma, Mayuri Bhagawati, Santanu Chakraborty, Badal K. Datta, Ajay K. Saha¹, Mohammad Oves, **Syed Arshad Hussain***

ACS Applied Bio Materials (American Chemical Society, IF=4.7) (under review)

2025

160. Preparation and characterization of WORM resistive memory switching using an organic dye Trypan Blue (TB) and its application to study synaptic behaviour for neuromorphic computation

Koshik Naha; Saikat Das; Shyam Kumar Bhattacharjee; **Syed Arshad Hussain**; Debajyoti Bhattacharjee

ACS Applied Electronic Materials 7/22 (2025) 10396–10410 (ACS, IF=4.3)

159. Polyhedral delafossite CuInO_2 anchored on layered graphene oxide nanosheets: Electrochemical detection of antibiotic traces aquaculture environment

Farhana Yasmin Rahman; Rajendran Surya; Subramanian Sakthinathan; **Syed Arshad Hussain**; Mani Govindasamy, tewei chiu

Journal of Environmental Chemical Engineering 13/5 (2025) 118690 (Elsevier, IF= 7.2)

158. Characterization of charge carrier transport in thin organic films used in write once read many resistive memory device

Nilima Biswas; Koshik Naha; Shyam Kumar Bhattacharjee; **Syed Arshad Hussain**; Debajyoti Bhattacharjee

Journal of Materials Science: Materials in Electronics 36 (2025) 867 (Springer, IF=2.478)

157. Compression-induced aggregation behaviour of di-iodo-Pb(II) long chain alkyl substituted azoimidazole complex at air-water interface and fabrication of Schottky barrier diode via Langmuir-Blodgett technique

Ujjal Saren, Debashis Mallick, Dipankar Sahoo, Surajit Sarkar, Pradip Maiti, Alapan Pal, **Syed Arshad Hussain**, Debajyoti Bhattacharjee, Chittaranjan Sinha, Pabitra Kumar Paul

Surfaces and Interfaces 62 (2025) 106310 (Elsevier, IF=5.7)

156. Greenly Synthesized Silver Nanoparticle Modulated Polydiacetylene Based Colorimetric Pesticide Sensor

Hussain, Shazidul; Majumder, Sangita; Sarma, Dipan; Bhattacharjee, Debajyoti; Alibrahim, Khuloud ;

Alodhayb, Abdullah; Agarwal, Hemant ; **Syed Arshad Hussain**
RSC Advances 12 (2025) 18372 (RSC, IF=3.9)

155. Interfacial Aggregation Behavior of a New Amphiphilic Liquid Crystal Dimer: Influence of Subphase Parameters and Spreading Conditions

Sutapa Deb; Banti Baishya, Shazidul Islam; **Syed Arshad Hussain**, Ranendu Kumar Nath, Manoj Paul
Submitted to Journal of Colloid and Interface Science (Elsevier, IF=9.65)

154. Impact of Carrageenan-Based Microencapsulation: A Clean and Sustainable Approach to Improve Stability and Bioactivity of Freshwater Snail (*Bellamya bengalensis*) Protein Hydrolysates

Anand Vaishnav, Naresh Kumar Mehta, Mocherla Bhargavi, Priyadarshini, Soibam Khogen Singh, Pratap Chandra Acharya, Satyajeet Biswal, Harjeet Nath, **Syed Arshad Hussain**, Prasenjit Pal, Jham Lal, Nongthongbam, Sureshchandra Singh, Bikash Kumar Patil
Colloid and Interfaces 9 (2025) 29 (MDPI, IF=2.5)

153. Advances in Protein-Based Resistive Switching Memory: Fundamentals, Challenges and Applications

Hritinava Banik; Surajit Sarkar; Rahul Deb; Debajyoti Bhattacharjee; **Syed Arshad Hussain***
ACS Applied Electronic Materials 7/6 (2025) 2208-2232 (ACS, IF=4.3) [Invited Review]

152. A paradigm shift from Write Once Read Many (WORM) characteristics of two individual materials to Complimentary Resistive Switching (CRS) characteristics in the resistive memory device when mixed together

Shyam Bhattacharjee, Kausik Naha, Pabitra Kumar Paul, **Syed Arshad Hussain**, D. Bhattacharjee
Journal of Electronic Materials (2025) (Springer, IF=2.2)

151. Co-existence of WORM and RRAM Resistive Switching in Coumarin Derivatives: A Comprehensive Performance Analysis

Deb, Rahul; Banik, Hritinava; De, Utpal Chandra ; Bhattacharjee, Debajyoti; Alibrahim, Khuloud ; Alodhayb, Abdullah; **Syed Arshad Hussain***
ACS Omega 10(11) (2025) 11091–11107 (ACS, IF=3.7)

150. Development of Dihydropyrimidine Based Chemosensor for Hg²⁺ ions

Sayari Saha; Samia Chaudhuri; Rupasree Choudhury; Tarun Misra ; Hritinava Banik; **Syed Arshad Hussain**, Jhinuk De
Inorganica Chimica Acta 755 (2025) 122480 (Elsevier, IF=2.7)

149. Nickel(II) Complexes with Mixed Ligands: Synthesis, WORM Memory Applications, and Potential Biological Applications as Anticancer and Antifungal Agents

A. Das, Hritinava Banik, **Syed Arshad Hussain**, D. Maiti, T. Aktar, B. Paul, P. Debnath, Lesław Sieroń, A. Bhattacharya, K. Lal Bhowmika, Waldemar Maniukiewicz, P. Debnath
Indian Journal of Chemistry 64 (2025) 528

148. Spectroscopic investigation of two xanthane dyes assembled onto LbL films: Trace of energy transfer and design of FRET based Pesticide sensor

Sangita Majumdar, S. Hussain, D. Bhattacharjee, D. Dey, **Syed Arshad Hussain***
Scientific Reports 15 (2025) 2824 (Springer, IF=4.682)

147. Bromelain Excised Hydrolysates with Potent Bioactivity from *Bellamya bengalensis* Soft Tissues: Process Optimization and Characterization

Anand Vaishnav; **Syed Arshad Hussain**; Pratap Chandra Acharya; Satyajeet Biswal; Harjeet Nath; Mocherla Bhargavi Priyadarshini; Prasenjit Pal; Soibam Khogen Singh; Nongthongbam Sureshchandra Singh; Bikas Kumar Pati; Payel Debbarma; Krishan Kumar Yadav, Naresh Kumar Mehta
Journal of Agriculture and Food Research 19 (2025) 101595 (Elsevier, IF=4.8)

146. Voltage sweep direction dependent memory characteristics in an organic film
Nilima Biswas, Shyam Kumar Bhattacharjee, **Syed Arshad Hussain**, Pabitra Kumar Paul, Debajyoti Bhattacharjee
Journal of Electronics Materials 54 (2025) 809-819 (Springer)

2024

145. Clay Induced Performance Enhancement of a Plant Extract-Based WORM and RRAM for Sustainable Data Storage and Neuromorphic Computing Applications
Farhana Yasmin Rahman, Santanu Chakraborty, Rahul Deb, Md. Jashim Uddin, Debajyoti Bhattacharjee, Khuloud A. Alibrahim, Abdullah N. Alodhayb, **Syed Arshad Hussain***
ACS Applied Electronic Materials 6(9) (2024) 6591 – 6607 (ACS, IF=4.5)

144. Coumarin Based Non-Volatile WORM Device on a Graphite Coated Paper Substrate
Rahul Deb, D. Bhattacharjee, U. C. De, **Syed Arshad Hussain**
Interactions 244 (2024) 167 (Springer)

143. A review on Natural dyes as a sensitizer in dye- sensitized solar cell
Anchal Debnath , Shyam Kumar Bhattacharjee , Ramkrishna Sutradhar , Chandan Debnath, Debajyoti Bhattacharjee, **Syed Arshad Hussain**
Interactions 245 (2024) 325 (Springer)

142. A review on nano clay platelets and micellar-induced controlling of molecular aggregates in Langmuir Blodgett film
Anchal Debnath , Chandan Debnath , Shyam Kumar Bhattacharjee , Debajyoti Bhattacharjee, **Syed Arshad Hussain**
Interactions 245 (2024) 327 (Springer)

141. Colorimetric sensor for detecting volatile organic compound
Shazidul Hussain, Sangita Majumdar, D. Bhattacharjee, U. C. De, **Syed Arshad Hussain**
Interactions 245 (2024) 303 (Springer)

140. Study of the supramolecular organization of Langmuir-Blodgett hybrid ultrathin film of azo-functionalized hockey stick-shaped mesogen/Stearic acid at air-water and air-solid interfaces
Sutapa Deb, Shazidul Hussain, B. Baishya, M. K. Paul, **Syed Arshad Hussain**, R. K. Nath
Colloids and Surfaces A: Physicochemical and Engineering Aspects 702 (2024) 135056

139. Influence of nano-clay platelet concentration on achieving a transition from Write Once Read Many (WORM) to Complementary Resistive Switching (CRS) behaviour in organo-clay hybrid thin films for memory applications
S. K. Bhattacharjee, C. Debnath, P. K. Paul, D. Bhattacharjee, **Syed Arshad Hussain**
Journal of Materials Science: Materials in Electronics 35 (2024) 1246

138. Transition metal complexes with S and N-donor ligands: Synthesis, Characterization, Luminescent properties, Current-Voltage characteristics, FESEM studies, Antibacterial and Antifungal activities
A. Das, Hritinava Banik, **Syed Arshad Hussain**, D. Maiti, T. Aktar, B. Paul, P. Debnath, Lesław Sieroń, A. Bhattacharya, K. Lal Bhowmika, Waldemar Maniukiewicz, P. Debnath
Asian Journal of Chemistry 36(6) (2024) 1348-1358

137. ZnO nanoparticle induced performance enhancement of a coumarin based non-volatile memory device
Rahul Deb, D. Bhattacharjee, **Syed Arshad Hussain***
ACS Applied Engineering Materials 2, 4 (2024) 1141–1152 (American Chemical Society)

136. Cd(II) and Zn(II) Complexes with 2-Mercaptopyridine: Synthesis, Crystal structure, Hirshfeld surface analysis, Luminescent properties, Aggregation behaviours, (I–V) characteristic and Antibacterial assay

A. Das, Hritinava Banik, **Syed Arshad Hussain**, D. Maiti, T. Aktar, B. Paul, P. Debnath, Lesław Sieroń, A. Bhattacharya, K. Lal Bhowmika, Waldemar Maniukiewicz, P. Debnath
Polyhedron 247 (2024) 116747 (Elsevier, Impact Factor: 2.6)

135. Sensing of Gunshot Residue components from real sample using Fluorescence Resonance Energy Transfer

Dibyendu Dey, Aayush Dhaka, H. K. Pratihari, **Syed Arshad Hussain**, Arpan Datta Roy
Sensors and Actuators B (Elsevier, Impact Factor: 8.4) (under review)

134. Enhanced fluorescence efficiency of an organo-clay hybrid Langmuir-Blodgett film
N. Biswas, S. Kumar Bhattacharjee, C. Debnath, **Syed Arshad Hussain**, D. Bhattacharjee
Physica Scripta (under review) (IOP, IF: 3.081)

133. Confirmation of Charge carriers' types based on HOMO-LUMO positions in the active layer of a WORM memory device.

S. K. Bhattacharjee, C. Debnath, **Syed Arshad Hussain**, Pabitra Paul, D. Bhattacharjee
J Mater Sci: Mater Electron 35 (2024) 143 (Springer, IF = 2.8)

2023

132 Tuning of polydiacetylene phase behaviour mixed with cholesterol derivative and its application towards the detection of pathogenic bacteria

Shazidul Hussain, Sangita Majumder, Akshit Malhotra, Ashwini Chauhan, Debajyoti Bhattacharjee, **Syed Arshad Hussain***
J Mater Sci 58 (2023) 15762–15779 (Springer; Impact Factor: 4.5)

131. Carrier type exchange with sweep direction in a WORM memory device

Shyam Kumar Bhattacharjee; **Syed Arshad Hussain**; Pabitra Paul; Debajyoti Bhattacharjee
ACS Applied Electronic Materials 5(7) (2023) 3917–3924 (American Chemical Society, IF = 4.494)

130. Surfactant micellar induced aggregation control of an anionic fluorescent dye in Langmuir Blodgett Film

N. Biswas, S. K. Bhattacharjee, C. Debnath, **Syed Arshad Hussain**, D. Bhattacharjee
Physica Scripta 98 (2023) 085015 (IOP, IF: 3.081)

129. Noncytotoxic WORM Memory Using Lysozyme with Ultrahigh Stability for Transient and Sustainable Electronics Applications

H. Banik, S. Sarkar, D. Bhattacharjee, A. Malhotra, A. Chauhan and **Syed Arshad Hussain***
ACS Omega 9(1) (2024) 618–627 (American Chemical Society, IF=4.132)

128. Effect of functional group and long chain fatty acid on the memory switching behavior of tetraindolyl derivative

Surajit Sarkar, Hritinava Banik, Farhana Yasmin Rahman, Swapan Majumdar, Debajyoti Bhattacharjee and **Syed Arshad Hussain***
RSC Advance 13 (2023) 26330–26343 (Royal Society of Chemistry, IF=4.036)

127. Resistive Switching behavior employing Ipomea Carnea plant for biodegradable re-writable read only memory (RWROM) applications

Farhana Yasmin Rahman, Rahul Deb, Surajit Sarkar, Hritinava Banik, Md. Jashim Uddin, Santanu Chakraborty, Debajyoti Bhattacharjee and **Syed Arshad Hussain***
ACS Applied Electronic Materials 5(7) (2023) 3685–3697 (American Chemical Society, IF = 4.494)

126. An account of Natural material based Non Volatile Memory Device

Farhana Yasmin Rahman, Debajyoti Bhattacharjee and Syed Arshad Hussain*
Proceedings of the National Academy of Sciences, India Section A: Physical Sciences 93 (2023) 497 (Springer, IF=1.291) (Invited Review)

2022

125. Complementary Resistive Switching Behavior in Tetraindolyl Derivative-Based Memory Devices
Surajit Sarkar, Farhana Yasmin Rahman, Hritinava Banik, Swapan Majumdar, Debajyoti Bhattacharjee, and **Syed Arshad Hussain***

Langmuir (American Chemical Society, IF=4.331) 38/30 (2022) 9229–9238

124. Design and synthesis of bis-coumarinyl methanes from 4-hydroxy-coumarin and aldehydes catalysed by Amberlyst 15 via dual C-C coupling: Introducing coumarin based thin film organic nano-materials for memory devices

Abhijit Rudra Paul, Surajit Sarkar, **Syed Arshad Hussain**, Dilip K. Maiti, Swapan Majumdar

Research on Chemical Intermediates (2022) (Springer, IF =3.134)

123. Interaction of a phospholipid and a coagulating protein: Potential candidate for bioelectronics application

Paul, Ripa; Banik, Hritinava; Alzaid, Meshal; D. Bhattacharjee, and **Syed Arshad Hussain***

ACS Omega 7,21 (2022) 17583–17592 (American Chemical Society, IF = 4.132)

122. Investigation of Non Volatile Resistive Switching Behaviour Using Rose Petal

Farhana Yasmin Rahman, H. Banik, S. Sarkar, D. Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proc. 65 (2022) 2693–2697 (Elsevier, IF=1.24)

121. Interaction of Amoxicillin with DOPC layer

Ripa Paul, D. Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proc. 65 (2022) 2718–2722 (Elsevier, IF=1.24)

120. Effect of surfactant micelle on the fluorescence efficiency of a water soluble anionic Xanthene dye in complex Langmuir-Blodgett (LB) film

S. K. Bhattacharjee, D. Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proc. 65 (2022) 2713–2717 (Elsevier, IF=1.24)

119. Polydiacetylene a unique material to design biosensors

Shazidul Hussain, Rahul Deb, Debajyoti Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proc. 65 (2022) 2765–2772 (Elsevier, IF=1.24)

118. RRAM and WORM Memory Devices using Protamine Sulfate and Graphene Oxide

H. Banik, S. Sarkar, F. Y. Rahman, D. Bhattacharjee, Hemen Kalita, **Syed Arshad Hussain***

Materials Today: Proc. 65 (2022) 2773–2777 (Elsevier, IF=1.24)

2021

117. Transient WORM Memory Device Using Biocompatible Protamine Sulfate with Very High Data Retention and Stability.

Banik, Hritinava; Sarkar, Surajit; Bhattacharjee, Debajyoti; **Syed Arshad Hussain***

ACS Applied Electronic Materials 3/12 (2021) 5248 – 5256 (American Chemical Society, IF = 4.494)

116. Polydiacetylenes-Hexadecylimidazole Mixed Film and its Application towards Sensing of Volatile Organic Compounds (VOCs), Gasoline and Pollution Level in Car Exhaust

S. Suklabaidya, S. Chakraborty, S. Sarkar, R. Paul, H. Banik, A. Chakraborty, D. Bhattacharjee, Debajyoti; S. Majumdar, **S. A. Hussain***

Journal of Physical Chemistry C 125 (2021) 15976 (American Chemical Society, IF=4.177)

115. 7-Alkoxy appended coumarin derivatives: Synthesis, photo-physical properties, aggregation behaviours and current–voltage (I-V) characteristic studies on thin films

Abhijit Pal; Bapi Dey; Sudip Suklabaidya; **Syed Arshad Hussain**; Swapan Majumdar

RSC Advances 11 (2021) 10212–10223 (RSC, IF=4.036)

114. Resistive switching of tetraindolyl derivative in ultrathin films: A potential candidate for non-volatile memory devices

Surajit Sarkar, Hritinava Banik, Sudip Suklabaidya, Barnali Deb, Swapan Majumdar, Debajyoti Bhattacharjee and **Syed Arshad Hussain***

Langmuir (American Chemical Society, IF=4.331) 15 (2021) 4449-4459

113. Micellar effect of CTAB on Phenol red sodium salt: A model system may be used for cell membrane study

Mitu Saha, Nilima Biswas, **S.A. Hussain** and, D. Bhattacharjee

Materials Today: Proceedings 46(14) (2021) 6433-6436 (Elsevier, IF=0.694)

112. Study of polydiacetylenes and rhodamine-800 mixed film at air-water interface and onto solid support: Trace of fluorescence resonance energy transfer (FRET)

S. Suklabaidya, S. Chakraborty, J. Saha, B. Dey, S. Sarkar, D. Bhattacharjee, **Syed Arshad Hussain***

Polymer Bulletin 78 (2021) 93-113 (Springer, IF=2.87)

111. Resistive Switching Behaviour of Organic Molecules (Brief Review)

Bapi Dey, Surajit Sarkar, Hritinava Banik, **Syed Arshad Hussain***

Materials Today: Proceedings 46(14) (2021) 6290-6294 (Elsevier, IF=0.694)

110. Fluorescence Resonance Energy Transfer (FRET) as Biomarkers (Brief Review)

Ripa Paul, Sudip Suklabaidya, **Syed Arshad Hussain***

Materials Today: Proceedings 46(14) (2021) 6301-6303 (Elsevier, IF=0.694)

109. Fluorescence resonance energy transfer (FRET) between acriflavine and CdTe quantum dot

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17. Spectroscopic characterizations of nonamphiphilic 2, 5-Bis (5- tert- butyl- benzoxazolyl) – thiophene molecules at the air-water interface and in Langmuir-Blodgett films

S. Biswas, S. A. Hussain and D. Bhattacharjee

Surface Review Letters Vol. 15, No. 6 (2008) 1–8 (World Scientific, IF = 1.24)

16. Electrostatic self assembly and characterization of ultra thin films of a secondary diazo dye

D. Dey, **S.A. Hussain**, D. Bhattacharjee

Chemical Journal on Internet, Aug. 1, 2008 Vol.10 No.8 P.38

15. Layer by Layer (LbL) Technique for fabrication of electrostatic Self assembled ultrathin films

D. Dey, M.N. Islam, **S.A. Hussain** and D. Bhattacharjee

International Journal of Pure and Applied Physics, Vol. 4, No. 1 (2008) pp. 39—44

2007

14. Immobilization of single strand DNA on solid substrate

S. A. Hussain, P. K. Paul, D. Dey, D. Bhattacharjee and S. Sinha

Chemical Physics letter Vol. 450, Issues 1-3, 14 December 2007, Pp 49-54 (Elsevier; IF: 2.719)

13. Miscibility and molecular orientation of carbazole in the mixed Langmuir and Langmuir-Blodgett films
Md. N. Islam, D. Bhattacharjee and **S. A. Hussain***
Chinese Physics letter (IOP) 2007 24 (7): 2044-2047 (IOP, IF=2.293)
12. Langmuir-Blodgett films of p-terphenyl into different matrices: Evidence of dimer formation
S. Deb, **S. A. Hussain**, S. Biswas and D. Bhattacharjee
Spectro Chimica Acta A 68/2 (2007) 257-262 (Elsevier; IF=4.831)
11. Formation of complex Langmuir and Langmuir-Blodgett films of water soluble rosebengal
S. Biswas, D. Bhattacharjee, R. K. Nath and **S. A. Hussain***
Journal of Colloid and Interface Science 311(2) (2007) 361-367 (Elsevier, IF=9.965)
10. Miscibility of two components in the binary mixture of 9-phenyl anthracene mixed with stearic acid or polymethyl methacrylate at air-water interface
P. K. Paul, Md. N. Islam, D. Bhattacharjee and S. A. Hussain*
Chinese Physics Letter (IOP) Vol 21 No. 5 (2007) 1331 (IOP, IF=2.293)
9. Orientation of Carbazole molecule in the mixed Langmuir-Blodgett films
S. Biswas, D. Bhattacharjee and **S. A. Hussain***
Macromolecules: An Indian Journal Vol. 3 Issue 4, 2007.

2006

8. Formation of complex films with water-soluble CTAB molecules
S. Biswas, **S. A. Hussain**, S. Deb, R. K. Nath and D. Bhattacharjee
Spectro Chimica Acta part A 65 (2006) 628–632 (Elsevier; IF=4.831)
7. Role of microenvironment in the mixed Langmuir-Blodgett films
S. A. Hussain, P. K. Paul and D. Bhattacharjee
Journal of Colloid and Interface Science; Vol. 299 Issue 2 (2006) pp 785 – 790 (Elsevier, IF=9.965)
6. Role of various LB parameters on the optical characteristics of mixed Langmuir-Blodgett films
S. A. Hussain, P. K. Paul and D. Bhattacharjee
Journal of Physics and Chemistry of Solids 67 (2006) 2542–2549 (Elsevier; IF: 4.383)

2005

5. Spectroscopic Characterizations of the mixed Langmuir Blodgett (LB) films of 2,2'-biquinoline molecules: evidence of dimer formation
S. Deb, S. Biswas, **S. A. Hussain** and D. Bhattacharjee
Chemical Physics Letter , 405 (2005) 323–329 (Elsevier; IF: 2.719)
4. Spectroscopic Characterizations of non-amphiphilic 2-(4-biphenyl)-6-phenyl benzoxazole molecules at the air-water interface and in Langmuir-Blodgett Films
S. A. Hussain, S. Deb and D. Bhattacharjee
Journal of Luminescence, 114 (2005) 197-206 (Elsevier; IF= 4.171)
3. Langmuir Blodgett Films of 9-phenyl anthracene molecules incorporated into different matrices
S. A. Hussain, S. Deb, S. Biswas, D. Bhattacharjee
Spectrochimica Acta Part-A , 61 (2005) 2448-2454 (Elsevier; IF=4.831)
2. Ageing effect of mixed Langmuir-Blodgett film of 9-Phenyl Anthracene in PMMA and SA matrices
S. Deb, S. Biswas, **S. A. Hussain** and D. Bhattacharjee
Indian Journal of Physics 79 (9), 1027-1031 (2005) (Springer, IF=1.778)

1. Langmuir-Blodgett technique a unique tool for fabrication of Ultrathin Organic Films
S. A. Hussain, S. Deb and D. Bhattacharjee
J. Env. Sc. Res. Vol 4 (25-33), 2005

Annexure – D

List of publications in conference proceedings:

Research Papers (In Conference Proceedings) : **23**

[<https://thinfilmlabtu.wordpress.com/proceedings/>]

24) Polydiacetylene and imidazole mixed self-standing films for colorimetric detection of various volatile organic analytes

Sudip Suklabaidya, S Chakraborty, S Sarkar, D Bhattacharjee and **Syed Arshad Hussain***

Journal of Physics: Conference Series (IOP), (2019) 1330, 012012 11

23) Role of quantum dot in designing FRET based sensors

Jaba Saha, Arpan D. Roy, D. Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2306–2313 (Elsevier)

22) Editorial: A special issue on Material Science based on the papers presented during Second International Conference on Material Science

Syed Arshad Hussain*

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2023–2030 (Elsevier)

21) Study of an Imidazole Derivative Mixed with Fatty Acid at Air-Water Interface and in Ultrathin Films

Bapi De, Swapan Majumdar, D. Bhattacharjee, **Syed Arshad Hussain***

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2287–2294 (Elsevier)

20) Effect of Electric Field on J-aggregate in Ultrathin Films

Pintu Debnath, S. Deb, **Syed Arshad Hussain***

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2275–2280 (Elsevier)

19) Polydiacetylene (PDA) Film: A unique sensing element

Sekhar Chakraborty, Syed Arshad Hussain*

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2367–2372 (Elsevier)

18) Interaction of an antibiotic – Norfloxacin with lipid membrane

Sudip Suklabaidya, **Syed Arshad Hussain***

Materials Today: Proceedings Materials Today: Proceedings 5 (2018) 2373–2380 (Elsevier)

17) Metachromasy of a water soluble phthalocyanine dye in the solutions and deposited Langmuir films

A. Shil, C. Debnath, **S. A. Hussain**, D. Bhattacharjee

Materials Today: Proceedings (Elsevier) Materials Today: Proceedings 5 (2018) 2339–2344

16) Effect of DNA in controlling the H-dimeric sites of Nile Blue Chloride (NBC) in ultra-thin film

C. Debnath, A. Shil, **S. A. Hussain**, D. Bhattacharjee

Materials Today: Proceedings (Elsevier) Materials Today: Proceedings 5 (2018) 2345–2351

15) Effect of nano clay platelets on the hybrid monolayer of a cationic oxazine dye: In-situ Brewster Angle Microscopic (BAM) study

Soma Banik , Mitu Saha, **S. A. Hussain**, D. Bhattacharjee

Materials Today: Proceedings (Elsevier) Materials Today: Proceedings 5 (2018) 2352–2358

14) Study of aggregation behavior of water insoluble metalloporphyrin (Zn) in LB film

Mitu Saha , Soma Banik, **S. A. Hussain**, D. Bhattacharjee

Materials Today: Proceedings (Elsevier) Materials Today: Proceedings 5 (2018) 2246–2253

13) Electrical Switching Behaviour of Organic Molecules assembled Onto Ultrathin Film.

Bapi Dey, Santanu Chakraborty, Pintu Debnath, D. Bhattacharjee, **Syed Arshad Hussain***

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

12) Formation of SHG active J-aggregated species of a cyanine dye in Langmuir – Blodgett (LB) Films.

Pintu Debnath, Santanu Chakraborty, Subrata Deb, D. Bhattacharjee, **Syed Arshad Hussain***

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

11) FRET based pH sensor.

Jaba Saha, Arpan Datta Roy, Dibyendu Dey, D. Bhattacharjee, **Syed Arshad Hussain***

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

10) Design of a molecular logic X-OR gate based on Energy Transfer between two dyes.

Arpan Datta Roy, Jaba Saha, Dibyendu Dey, D. Bhattacharjee, **Syed Arshad Hussain***

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

9) Adsorption behaviour of a cationic dye onto nano clay platelets in layer by layer self assembled film.

Soma Banik, Mitu Saha, **S.A. Hussain**, D. Bhattacharjee

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

8) Adsorption of protein at air-water interface in the presence of two Xanthene dyes.

Mitu Saha, Soma banik, **S.A. Hussain**, D. Bhattacharjee

Status of Research in Physics in North-East India, (2015) ISBN 978-93-81631-38-6.

7) Mechanics of nano – clay layers: saponite and hectorite Mechanics of nano – clay layers: saponite and hectorite

Syed Arshad Hussain*

Proceedings of the Conference on Conference on Recent Trends of Research in Physics (CRTRP) Organized by Department of Physics, Tripura , -4 Feb., 2012 (Research India Publications New Delhi) ISBN: 978-81-904362-9-8 (2013)

6) Adsorption behavior of Rhodamine B and laponite in ultra thin films by LBL method

Syed Arshad Hussain*

Proceedings of the Conference on Conference on Recent Trends of Research in Physics (CRTRP) Organized by Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN: 978-81-904362-9-8 (2013)

5) Molecular logic gates using FRET phenomenon

Jaba Saha, D. Bhattacharjee, **Syed Arshad Hussain***

Conference on Recent Trends of Research in Physics (CRTRP) Organized by Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN: 978-81-904362-9-8 (2013)

4) Formation of dimer in Layer-by-Layer self assembled films of Oxazine 4 Perchlorate

D. Bhattacharjee, **Syed Arshad Hussain***

Proceedings of the Conference on Conference on Recent Trends of Research in Physics (CRTRP)
Organized by Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN: 978-81-904362-9-8 (2013)

3) Incorporation of a laser dye onto lipid matrix at air-water interface

Mitu Saha, **Syed Arshad Hussain**, D. Bhattacharjee

Proceedings of the Conference on Conference on Recent Trends of Research in Physics (CRTRP)
Organized by Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN: 978-81-904362-9-8 (2013)

2) Study of nano dimensional hybrid organo-clay Langmuir-Blodgett films

S. Chackraborty, D. Bhattacharjee, **Syed Arshad Hussain***

Proceedings of the Conference on Conference on Recent Trends of Research in Physics (CRTRP)
Organized by Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN: 978-81-904362-9-8 (2013)

1) Fabrication and characterization of polymer-clay nanocomposites using electrostatic layer-by-layer (LbL) self assembled technique.

D. Bhattacharjee, **Syed Arshad Hussain***

Proceedings of the Conference on Recent Trends of Research in Physics (CRTRP) Organized by
Department of Physics, Tripura University, 3-4 Feb., 2012 (Research India Publications, New Delhi) ISBN:
978-81-904362-9-8 (2013)

Annexure - E

Invited Talk / Paper presented in National / International Conference/Seminar:

89. International Conference on Advanced Materials for Sustainability and Innovation: Energy, Environment and Health (ICAMSI 2025) during 12th to 14th Nov, 2025 as Invited Speaker and to Chair a Technical Session.

Title of the talk: Biomemristors as the Next Generation Memory Devices

Chaired a Technical Session on “Advanced and Functional Materials” during 10:55 AM – 11:10 AM on 13.11.2025 [click here](#)

88. Two Days Workshop on “Secrets & Strategies in Capturing Research Grants” during 02-08-2025 & 03-08-2025 organized by UGC-MMTTC, University of North Bengal, West Bengal, India

Title of the talk: Designing Competitive Proposals for Submission to the National Funding Agencies

87. JSPS Core-to-Core Program, The University of Osaka, Global Expansion Research Program, 21th ORDL Seminar on Chemistry and Physics for Memristors

(As a part of the Collaboration with Prof T. Matsumoto, Department of Chemistry, The University of Osaka), July, 14, 2025

Title of the Talk: Biomemristors as the Next Generation Memory Devices [Click here](#) | [Click here](#)

86. As a part of the Collaboration with Prof Shusaku NAGANO, Department of Chemistry, College of Science, Rikkyo University, Tokyo, Japan, July, 11, 2025

Title of the Talk: Organo – clay hybrid as sensing platform

85. 19th International Conference on Organized Molecular Films (ICOMF19)

July 7 – 11, 2025 (Monday – Friday), Meiji University, Tokyo, Japan

Title of the Talk: Organo – clay hybrid: promising candidate for optoelectronics applications

84. Six-day National Faculty Development Program for Research Scholars/Faculty members on the theme Organic Semiconductor Innovations: A Faculty Development Initiative, scheduled to take place from 9th to 14th December 2024 organized by Department of Chemistry, Central University of Tamil Nadu, India.

Title of the Talk: Memristors as the Next Generation Memory Devices

83. The Asia-Pacific Conference on Condensed Matter Physics 2024 (AC2MP-2024) to be held at the Indian Institute of Technology Patna (IIT Patna), India during December 8-11, 2024.

82. XIV Biennial Conference of the Physics Academy of the North-East (PANE), to be held at Tezpur University from 12th-14th November 2024

Title of the Talk: Multifunctional Organo – clay hybrid: promising candidate for optoelectronics applications

81. 32nd Edition of the National Conference “Condensed Matter Days (CMDAYS-2024) from November 4-6, 2024 at the Department of Physics, Dibrugarh University, Assam

Title of the Talk: Biomemristors as the Next Generation Memory Devices

80. 23rd Science Council of Asia Conference (23rd SCAC) organized by Bangladesh Academy of Sciences during 26 – 28 Oct, 2024

Title of Talk: Biomaterials induced memristors: potential candidate for the next generation bioelectronics

79. “International Conference on Semiconductor Technologies – Materials to Chips“, 18th – 20th September 2024, is being organized by Amity Institute for Advanced Research and Studies (Materials & Devices) &

Amity Institute of Nanotechnology at Amity University Uttar Pradesh, Noida, India in association with Society of Semiconductor Devices (SSD) & Semiconductor Society (India).
Title of talk: Resistive switching a promising alternative towards Si based memory [Click here](#)

78. “International Conference on Energy and Environmental Materials (E2M-2024)” organized by the Department of Metallurgical Engineering and Materials Science, IIT Indore in association with IIT Kanpur and Gauhati University during July 11-13, 2024 at IIT Indore, Madhya Pradesh, India.
Title of the talk: RRAM using protein for transient electronics application [Click here](#)

73. “North-East Engineering Techade Hub: A Gurantee for Swabalamvi Bharat” organized by Tripura Institute of Technology, Agartala on 20th March, 2024.
Title of the talk: Semiconductor facility in India: Future Implications [click here](#)

72. “International Conference on Frontiers in Pure and Applied Physics” in collaboration with Physics Academy of North East (PANE) held at USTM Meghalaya during 29th February–2nd March, 2024
Title of the talk: Resistive Switching Memory using Organic Molecules [Invitation](#) [Certificate](#)

71. International Conference on Recent Advances in Mathematical, Physical and Chemical Sciences (ICRAMPC-2024) from February 21–23, 2024 organized by Mizoram University [download](#) [certificate](#)
Title of the talk: Organo – clay hybrid films: A Potential candidate for optoelectronics applications

70. National Physicists Conclave 2024 (NPC 2024) organized by SRM, Chennai during 7-10 Feb., 2024
Title of the talk: Resistive Switching Memory Devices using Organic Molecules [download](#) [click here](#)
National Conference on “Recent Trends in Research in Sciences, Social Sciences and Languages” during 24th & 25th November, 2023 organized by IQAC, Women’s College, Agartala.
Title of the talk: Research & Development for a Sustainable Future [download](#)

69. Multidisciplinary Faculty Development Program on “Sustainable Engineering: Integrating Multidisciplinary Approaches for a Greener Future” organized by ICFAI University, Tripura during 17th July to 21st July, 2023.
Title of the talk: Research & Development for a Sustainable Future [certificate](#) [invitation](#)

68. Special lecture organized by Research & Development Cell, Tripura University on February 24 (Friday), 2023 from 2.00 P.M. at the Conference Hall (1st-floor), Library Building, Tripura University.
Title of the talk: Higher Education, Research & Development for a Sustainable Future

67. 30th National Conference on Condensed Matter Physics CONDENSED MATTER DAYS 2022 (CMDAYS–22) Organized by NIT Nagaland during 14th-16th December
Title of the talk: Nanodimensional Organo-clay hybrid films

66. XIII Biennial National Conference of Physics Academy of North East (PANE-2022) [click for detail](#)
Organized by Department of Physics, Manipur University during 08-10 November, 2022
Title of the talk: Resistive Switching Memory Devices using Organic molecules

65. Special lecture organized by National Forensic Science University, Agartala Campus on 16th September, 2022
Title of the talk: Higher Education, Research & Development for a Sustainable Future

64. Short-term course on “Advanced Materials for Environmental Sensors”
IIT Indore, India: Dates: 07-12 March 2022 [click here](#)
Title of the talk: Polydiacetylenes (PDAs): A unique conjugate polymer suitable for Naked Eye Colorimetric Sensors

63. International Conference on Emerging trend in nanomaterials Science and technology (ICETNMST-2022)
NIT Nagaland, India: Dates: 27,28 and 29 January, 2022
Title of the talk: Functional hybrid clay mineral films: promising candidate for optoelectronics

62. 1st Training School / Workshop on Environmental Cyber-Physical Systems (E-CPS)
Organized by Indo -South Korea Joint Network Center (JNC), Indian Institute of Technology Indore
Dates: 23-27 August 2021.

61. "International Conference on Nanotechnology for Better Living NBL-2" (Keynote lecture)
Organized by NIT Srinagar, Jammu & Kashmir 7-11 Sept, 2021

60. "National Science Day – 2021" celebration (Invited Talk)
Organized by ADB College, Nagaon, Assam on 6th March, 2021

59. "National Science Day – 2021" celebration (Keynote lecture)
Jointly by Women's College, Agartala & Tripura Council for Science and Technology, Govt. of Tripura on 26.02.2021

58. Attended International webinar on Quantum Materials and Nanoparticles for Advanced Applications
organized by Kamraj College, Tamilnadu, India; Date: 06.08.2020

57. Attended International webinar, Recent Trends in Condensed Matter Physics & Applications (RTCMPA)-2020 organized by the Department of Physics, Kulti College in collaboration with IQAC, Kulti College. Date: 22.08.2020 (3.00 PM-6.00PM)

56. Attended webinars on "Research Projects: Conceptualisation to Implementation organized by American Chemical Society (ACS)
By Professor Sandeep Verma, Secretary, Science and Engineering Research Board, DST, Govt. of India 4th July, 2020 (6.00 – 7.00 PM)

55. Organo-clay hybrid Films: Suitable for Optical memory, Switching & sensing applications
"International Web Conference on Advance Research in Science, Humanities and Social Science (IWCARSHSS 2020)" organized by MBB University, Tripura, India during 9-10 July, 2020.

54. Beauty of Nanotechnology with glimpse of probable future applications
Celebration of International Science Day by M.B.B. University, Agartala, Tripura on 28th Feb., 2020

53. Clay minerals – the ideal host material to manipulate the properties of organic molecules
31st MRSI AGM cum 2nd materials conclave click for details
Organized at CGCRI, Kolkata during 11-14th February, 2020.

52. Organo – clay supramolecular assemblies with colour switching properties
National Seminar and Workshop on Applications of Nanotechnology and Biotechnology in Daily Life (NSW-ANBDL)
26-28 September, 2019, Sibsagar College, Sibsagar, Assam, India.

51. Clay mineral as the ideal host material to prepare organin – inorganic hybrid supramolecular assembly (Invited Talk)
National Conference on Atomic, Molecular and Nano Sciences (NCAMNS-2019)
Organized by Department of Physics, Aliah University, Kolkata, India, 3 – 4 April, 2019

50. Beauty of Nano Technology: A glimpse of Future Application (Invited Talk)
Induction Training Programme of Faculty, organised by Faculty Development Center, Tripura University. 1 – 30 November, 2017

49. The Beauty of Material Science with special emphasis on Nanotechnology (Invited Talk)
Faculty Development Program on Nanotechnology: Applications in Science & Engineering in Women's Polytechnic, 16-18, October, 2017

48. The Beauty of Material Science (Invited Talk)

Research Scholar's Training Program" organized by Faculty Development Centre, Tripura University, 28th April to 4th May, 2017

47. Thin Films and Nanoscience – glimpse of recent developments (Invited Talk)

Workshop on PHOTONICS, ELECTRONICS, NANOTECHNOLOGY, INTEGRATED CIRCUITS AND SYSTEMS (PHOENICS-2016), February 29 – March 4, 2016

A UGC Networking Resource Center in Physical Sciences (UGC-NRCPS) Program

Organized jointly by Institute of Radio Physics & Electronics, University of Calcutta

and Department of Electrical Engineering, Tripura University

46. Nano – clay Laponite as Host Template to Enhance the Mechanical Stability of SHG active Thiacyanine Dye in ultrathin films (Invited Talk)

16th Asian Chemical congress (**International Conference**)

Organized by Federation of Asian Chemical Societies (FACS) which comprises of 33 chemical societies of the nations in the Asia Pacific region held at Dhaka, Bangladesh during 16 – 19 March, 2016

45.Organo – Clay Hybrid Nano Films (Invited Talk)

National Seminar on "Recent Trends on Material Science" at DDM college, khowai, Tripura on 1st March, 2016

44. FRET based sensors (Invited Talk)

National Conference NCRTRP-2015 Women's College, Agartala, Tripura during 23-24 July, 2015

43. Higher Education – Research and developments (Invited Talk)

National Science Day celebration at Women's college, Agartala, Tripura on 28th February, 2015

42.Nanodimensional Organo-Clay Hybrid Films with Improved Functionality (Invited Talk)

International conference on "Organic Devices: The Future Ahead" at Bhabha Atomic Research Centre, Mumbai, India during March 3-6, 2014. (**International**)

41.Nano-mechanics of single clay sheet (International)

International conference on Material Science (IS2013) Feb 21-23, 2013

Department of Physics, Tripura University, Tripura

40.Construction of basic and universal molecular logic gates on the basis pH sensitiveness of dsDNA

National conference on recent trends of research in Physics Feb 3-4, 2012

Department of Physics, Tripura University, Tripura

39.Clay sheets: the natural nano materials (International)

33rd annual conference of the Institute of Indian Geographers & International seminar on population, development & disaster management Feb 8-11, 2012

Department of Geography & Disaster Management, Tripura University, Tripura

38.

(i) Effect of Nano-Clay Layers on Fluorescence Resonance Energy Transfer Between Organic Dyes

(ii) Mechanical properties of nano-dimensional Clay Mineral Layers

Euroclay – 2011 held at ANTALYA June 26 – July 1, 2011 (**International**)

European Clay Groups Association (ECGA) & Turkish National Committee on Clay Science

37.Mechanics of nano-dimensional Clay mineral Sheets(International)

International conference on emerging areas of chemistry Jan 12-14, 2011

Department of Chemistry, Tripura University, Tripura

36.Nano dimensional organo – clay hybrid films

Fifteenth national conference on surfactants, emulsions and biocolloids – 2011 Dec 27-29, 2011
Department of Chemistry, Tripura University, Tripura

35. Langmuir-Blodgett films of Nano dimensional organo-clay hybrid films **(Invited Talk)**
International Science Seminar organized by The Asiatic Society of Bangladesh, Dhaka, during 28-29
Nov., 2011 **(International)**

34. Preparation and characterization of nano-clay hybrid monolayer films
21st Annual General meeting of Material research Society of India to be held on 9-11 Feb., 2010 at Sardar
Patel University.

33. Hybrid Langmuir-Blodgett Monolayers of Nano Clay: An Infrared and Atomic Force Microscopy Study.
International Conference on fundamental and applications of Nanoscience & Technology Dec 9-11, 2010
School of Materials Science & Nanotechnology, Jadavpur University, Kolkata, India. **(International)**

32. Organic molecules adsorbed onto nano-clay and Langmuir-Blodgett (LB) films: trace of FRET
97th Indian Science Congress, January, 3- 7, 2010, University of Kerala

31. Organo-clay hybrid films: An AFM and spectroscopic investigations
7th National Conference in Physics held at Department of Physics, Manipur University Oct 5-6, 2010
Department of Physics, Manipur University, Manipur, India

30. An AFM investigations of hybrid organo-clay films
Seminar on "Frontier Areas of Chemistry" Sept 3, 2010
Department of Chemistry, Tripura University

29. Influence of MgCl₂ on the organization of nano-clay sheet in the organo-clay hybrid films
National Seminar on Condensed Matter Physics (SCMP2010) Feb 16, 2010
Department of Physics, Tripura University

28. Mechanics of Clay Mineral Sheets: Hectorite and Saponite
International Clay Conference, June, 14 – 20, 2009; Castellaneta marina (TA) Italy **(International)**

27. Spectroscopic characterization of Layer-by-layer self-assembled films of Oxazine 4 (Ox4) and effects
of nano-clay platelets incorporation into the LbL films.
Discussion meeting on Statistical and Condensed Matter Physics, 31st Oct – 1st Nov, 2009, organized by
Department of Physics, Guwahati IIT, assam.

26. Effect of nano-clay platelets on the J-aggregation of thiocyanine dye organized in Langmuir-Blodgett
films.
CMDAYS-09, August 26-28, 2009, Department of Physics, Jadavpur University West Bengal

25. Direct observation of reaction-kinetics of Organo-Clay hybrid films at air-water interface by in-situ
Infrared Reflection Absorption Spectroscopy and AFM
VI th National Conference of the Physics Academy of North East on Physics research in North East, April
2-4 (2009), Department of Physics, Tripura University, Suryamaninagar

24. Molecular self assembly of Ultra-thin films by Electrostatic Layer by Layer (ELBL)
Technique
VI th National Conference of the Physics Academy of North East on Physics research in North East, April
2-4 (2009), Department of Physics, Tripura University, Suryamaninagar

23. Nano dimensional aggregates of schicago sky blue onto solid substrate
96th Indian Science Congress, January, 3- 7, 2009, NEHU, Shillong

22. Hybrid Langmuir-Blodgett Monolayers of Nano Clay: An Infrared and Atomic Force Microscopy Study.

96th Indian Science Congress, January, 3- 7, 2009, NEHU, Shillong

21. Investigation of a two dimensional phase separation between RhB and NK by fluorescence imaging microscopy

Organized by Department of Physics, karimganj College, Assam, India

20. Spectroscopic characterizations of layer – by – layer self assembled DNA films

International Workshop and Conference on: Statistical Physics Approaches to Multi-disciplinary Problems
January 07 – 13, (2008), Department of Physics, IIT Guwahati, India

19. Fabrication and characterizations of rosebengal self assembled films

Condensed Matter Days-2007, August 29-31. 2007 organized by N.I.T, Rourkela, Orissa

18. Langmuir-Blodgett films of water soluble DNA molecules

Condensed Matter Days-2007, August 29-31. 2007 organized by N.I.T, Rourkela, Orissa

17. Formation of stable Langmuir and Langmuir-Blodgett (LB) films of 2-(4-Biphenyl)-5 phenyl-1,3,4-oxadiazole and their spectroscopic characterizations

Vth PANE conference, 1-2 March, 2007, Organized by Department of Physics, Gauhati University, Assam, India.

16. Miscibility of two components in the binary mixture of 9-phenyl anthracene mixed with stearic acid and polymethyl methacrylate at the air-water interface

Vth PANE conference, 1-2 March, 2007, Organized by Department of Physics, Gauhati University, Assam, India.

15. Interaction kinetics of rosebengal and CTAB with stearic acid at the air-water interface

Vth PANE conference, 1-2 March, 2007, Organized by Department of Physics, Gauhati University, Assam, India.

14. Layer-by-layer self assembled films of DNA

National Conference on Disperse Systems, November 23-25, 2006, Organized by Department of Chemistry, Assam university.

13. Evidence of dimer formation in the mixed LB films of p-terphenyl in different matrices

National Conference on Disperse Systems, November 23-25, 2006, Organized by Department of Chemistry, Assam university.

12. Photophysical studies of Layer-by-Layer Multilayer assemblies of Amaranth PAH Self assembled Films

National Conference on Disperse Systems, November 23-25, 2006, Organized by Department of Chemistry, Assam university.

11. Slippage Effect and immobilization of DNA in Layer-by-Layer self assembled films

National Conference on Disperse Systems, November 23-25, 2006, Organized by Department of Chemistry, Assam university.

10. Formation of stable Langmuir monolayer of water soluble *N* – *Cetyl* *N,N,N* -trimethyl ammonium bromide due to the interaction with SA molecules at the air-water interface

S. Deb, S. A. Hussain and D. Bhattacharjee

PANE conference – 2004, November 5 & 6, 2004, Department of Physics, Gurucharan College, Silchar-788004, Assam

9. Photophysical studies of mixed Langmuir-Blodgett films of 2 – 2' – *Biquinolene* molecules mixed with two different matrices.

PANE conference – 2004, November 5 & 6, 2004, Department of Physics, Gurucharan College, Silchar-788004, Assam

8. Time dependent change in mixed Langmuir-Blodgett films of 9-Phenyl Anthracene in PMMA and SA matrices

National Symposium on Impact of Chemistry on Life and Society (NSICLS)

October 1-3, 2004, Department of Chemistry, Tripura University, Suryamaninagar-799130, Tripura

7. Spectroscopic characterizations of mixed Langmuir Blodgett films of PBBO molecules.

National Symposium on Impact of Chemistry on Life and Society (NSICLS)

October 1-3, 2004, Department of Chemistry, Tripura University, Suryamaninagar-799130, Tripura

6. Formation of stable Langmuir films of water soluble *N* – *Cetyl* *N,N,N* -trimethyl ammonium bromide at the air-water interface

National Symposium on Impact of Chemistry on Life and Society (NSICLS)

October 1-3, 2004, Department of Chemistry, Tripura University, Suryamaninagar-799130, Tripura

5. Langmuir-Blodgett technique a unique tool for fabrication of Ultrathin Organic Films.

CMDAYS-04, August 25-27, 2004, Department of Physics, NEHU, Shillong-793022

4. Ageing effect of mixed Langmuir-Blodgett film of 9-Phenyl Anthracene in PMMA and SA matrices.

CMDAYS-04, August 25-27, 2004, Department of Physics, NEHU, Shillong-793022

3. Photophysical characteristics of mixed Langmuir Blodgett films of PBBO molecules.

CMDAYS-04, August 25-27, 2004, Department of Physics, NEHU, Shillong-793022

2. Langmuir Blodgett films: An organized assemblies of molecules.

Third Regional Conference on Physics Research in North East India.

November 09, 2002, Organized by Department of Physics, Dibrugarh University

Dibrugarh-786004, Assam, INDIA.

1. Spectroscopic study of nonamphiphilic buPBD assembled onto Langmuir-Blodgett Films.

Third Regional Conference on Physics Research in North East India.

November 09, 2002, Organized by Department of Physics, Dibrugarh University

Dibrugarh-786004, Assam, INDIA.

Training Courses, Teaching-learning-Evaluation Technology Program, Faculty Development Program

1. Online Training Programme on the theme Teaching Effectively [click here](#)

06.02.2021 to 22.02.2021

Organized by Centre for Academic Leadership and Education Management (CALEM), at the UGC HRDC, Aligarh Muslim University, Aligarh

2. AICTE Training And Learning (ATAL) Academy Faculty Development Program (FDP) on Sensor Technology

21.09.2020 to 25.09.2020

Organized by Department of Physics, Tripura University

3. Refresher course in Experimental Physics

08.03.2015 to 23.03.2015

Tripura University, Tripura

4. Orientation program on “Information Technology and RTI” [click here](#)

23.10.2008 to 15.11.2008

Academic Staff College, Manipur University

5. Refresher course in Environmental Science [click here](#)

24.12.2012 to 13.01.2013

Academic Staff College, Gauhati University, Assam

6. Saksham – IT Training Program [click here](#)

21.11.2011 to 01.12.2011

Tripura University, Tripura

Annexure - F

Books authored / edited

1. Langmuir-Blodgett Films: Fundamentals to Applications

Editor: **Dr. S. A. Hussain**

Publisher : Elsevier - Health Sciences Division (2025)

ISBN-10: 0323857868; ISBN-13: 978-0323857864

2. AWAKEN THE MIND: A JOURNEY FROM SELF-DISCOVERY TO SOCIETAL TRANSFORMATION

Publisher: Gnan Bichitra (2025) ISBN: 81-8266-287-7

For hard copy call at +917629038042 (Gnan Bichitra, Agartala)

3. Mathematical Physics – I (ISBN-10: 9356486026)

for B.Sc. Physics (Major) 1st Semester

Publisher: Clever Fox Publishing (2023). This book is intended for B.Sc. Physics first semester major course as per syllabus of M.B.B. University and Tripura University, Tripura, India in particular as per NEP-2020 guideline. In this volume, there is total fifteen chapter covering entire syllabus of Paper Code:PH-101C: Mathematical Physics-I.

4. Langmuir-Blodgett Films

Author: **Dr. S. A. Hussain**

Paperback: 64 pages

Publisher: Grin Verlag GmbH (29 December 2011)

ISBN-10: 3656089442; ISBN-13: 978-3656089445

5. Proceedings of the Conference on Recent Trends of Research in Physics (CRTRP) Proceedings of the Conference on Recent Trends of Research in Physics (CRTRP-2012)

Edited by **Dr. S. A. Hussain**; Dr. A. Guha; Prof. D. Bhattacharjee; Prof. B. K. De; Dr. S. Chattopadhyaya

Publisher: Research India Publications, New Delhi (Edition : 2012)

Pages 177

ISBN: 978-81-904362-9-8

6. Research in Physics in north-East India click here for more details

Edited by **Dr. S. A. Hussain**; Dr. A. Guha; Prof. D. Bhattacharjee; Prof. B. K. De; Dr. S. Chattopadhyaya

Publisher: acb publications, Kolkata, India (2010)

ISBN No: 81-87500-53-0

7. Text of class IX SCIENCE based on TBSE new syllabus “AdhunikBigganSashtra” click here for details

Author: **Dr. S. A. Hussain**

Publisher: Goodluck Publisher, Agartala, Tripura (2016)

8 Special Issue on “Material Science” published in Invertis Journal of Science and Technology, Vol. 7, No. 2, 2014. click here to download the full issue

Editor: **Dr. S. A. Hussain**

9. Special Issue of the journal Physics Express (Cognizure), vol. 4 (2014) see details click for full text pdf.

Editor: **Dr. S. A. Hussain**

10. Special Issue of the journal Indian Journal of Physics (Springer), June 2010 volume 84 (6).

Editor: **Dr. S. A. Hussain**

Annexure - G

Edited special issues in journals:

- 1.** Edited a special issue in Springer journal “Interactions” vol-246 (43) (2024) [54 articles]
[<https://link.springer.com/collections/jdbceebbfj>]
- 2.** Edited a special issue in Elsevier journal “Materials Today: Proceedings” Volume 65, Part 5, Pages 2473-2904 (2022). [69 articles]
[<https://www.sciencedirect.com/journal/materials-today-proceedings/vol/65/part/P5>]
- 3.** Edited a special issue in International Journal of Engineering Research & Technology; PANE 2021 (Vol. 10 – Issue 7) [19 articles]
[<https://www.ijert.org/pane-2021-volume-10-issue-07>]
- 4.** Edited a special issue in Elsevier journal “Materials Today: Proceedings” Volume 46, Part 14, Pages 6083-6444 (2021) [65 articles]
[<https://www.sciencedirect.com/journal/materials-today-proceedings/vol/46/part/P14>]
- 5.** Edited a special issue in World Scientific Journal “International Journal of Nanoscience” (World Scientific) Vol. 17, No. 04, 1760027 (2018) [10 articles]
[<https://www.worldscientific.com/toc/ijn/17/04>]
- 6.** Edited a special issue in Elsevier journal “Materials Today: Proceedings” Volume 5, Issue 1, Part 2, Pages 2023-2400 (2018). [49 articles]
[<https://www.sciencedirect.com/journal/materials-today-proceedings/vol/5/issue/1/part/P2>]
- 7.** Served as the Guest Editor of Special Issue on “Material Science” published in Invertis Journal of Science and Technology, Vol. 7, No. 2, 2014. [19 articles]
- 8.** Served as the Guest Editor of Physics Express (Cognizure), vol. 4 (2014) – Special issue – proceedings of the ICMS2013 conference organized by Department of Physics, Tripura University during 21-23, February, 2013. [17 articles]
- 9.** Served as one of the Guest Editors of Indian Journal of Physics (Springer), June 2010 volume 84 (6) [25 articles] [<https://link.springer.com/journal/12648/volumes-and-issues/84-6>]