

## Curriculum Vitae

Name: Syed Arshad Hussain  
Nationality: Indian  
Date of Birth: 5. 12.1975  
Place of Birth: Kailashahar, Tripura, India  
Subdivision: Kailashahar  
State: Tripura  
Country: India  
Pin: 799277

### Present Position:

Lecturer  
Department of Physics,  
Tripura University,  
Suryamaninagar: 799 130  
Tripura, INDIA.

E-Mail: sa\_h153@hotmail.com  
tuphysic@sancharnet.in

Website: [www.sah.phy.googlepages.com](http://www.sah.phy.googlepages.com)

Fax: +91-381-237-4801 (O)  
Phone: +91-381-237-5317 (O)  
+919863027556 (M)

### Address for Correspondence:

#### Office Address:

Dr. Syed Arshad Hussain  
Lecturer  
Department of Physics  
Tripura University  
Suryamaninagar: 799130  
Tripura, India

#### Permanent Address (Home):

S/O: Syed Motachhir Ali  
P.O.: Kailashahar  
Dist: North Tripura  
Pin: 799277  
Tripura, INDIA  
Phone: +913824222653

## Educational Qualification:

B.Sc. Physics Honours (Major): 1999  
M.Sc. (Physics): 2001  
Ph. D. (Material Science): 2007 (February)

Worked in the Department of Physics, Tripura University, India.

Title of the thesis: *“Photo Physical Studies of Organized Molecular Assemblies in Langmuir Blodgett Films”*.

## Present Working Address: (July, 2007 to July, 2008)

Visiting Scientist

Centre for Surface Chemistry and Catalysis, K. U. Leuven,  
Kasteelpark Arenberg 23 - bus 2461, 3001 Heverlee, Belgium

<http://www.kuleuven.be/cv/u0055993e.htm>

Phone: +32487947135 (M)

E-mail: [Arshad.Hussain@biw.kuleuven](mailto:Arshad.Hussain@biw.kuleuven)

<http://www.kuleuven.be/cv/u0055993e.htm>

## Knowledge of Instruments:

Langmuir Blodgett Film deposition Instrument  
UV-VIS Absorption Spectroscopy,  
Fluorescence spectroscopy,  
Scanning Electron Microscope (SEM),  
Transmission Electron Microscope (TEM)  
Atomic Force Microscope (AFM)  
FTIR, XRD  
Spin Coating Instrument

## Knowledge of Computer Language:

BASIC, FORTRAN, C, C++, Visual BASIC

## Instruments in Our Laboratory:

- (i) One Langmuir Blodgett Film deposition instrument,
- (ii) One UV-Visible Absorption Spectrophotometer
- (iii) One Fluorescence Spectrophotometer
- (iv) One spin Coating unit
- (v) Millipore Ultrapure Water purification system (18.2 M-ohm)

## Research Grant Obtained:

1. Project Title: *“Photophysical studies of organized molecular assemblies in Langmuir-Blodgett Films”*.

Funding Agency: UGC, Govt. of India; No.F.1-1/2000(FD-III)/399; Sanction Ref: NO. F.31-30/2005(SR).

2. Project Title *Photophysical investigation of stable Langmuir Blodgett films of organic, polymeric and water soluble materials*

Funding Agency: CSIR, India; Sanction Ref. No.03(7200)/06

## Research Interest:

During my pre Ph.D. research work, I concentrated mainly on the spectroscopic and photophysical studies of non-amphiphilic organic molecules assembled in the Langmuir-Blodgett Films. Generally it is observed that non-amphiphilic molecules don't form stable Langmuir films at the air-water interface. However, when they are mixed with a long chain fatty acid (viz. stearic acid/ arachidic acid) or an inert polymer (Polymethyl methacrylate / polystyrene), they form excellent Langmuir and Langmuir-Blodgett (LB) films. The spectroscopic properties of the molecules assembled in such a film are different to that in the solution or microcrystal. Recently we are studying the properties of the mixed LB films using various matrix elements (mainly inert polymer matrix). A comparison with various matrices is also our interest of study.

My other recent interest lies in the investigation of the feasibility of formation of stable LB films of water soluble charge transfer types of molecules.

I am also studying the optical properties of mixed LB films of various non-amphiphilic organic, metallo-organic and polymeric and water soluble molecules mixed with various inert polymer & fatty acid matrices.

I am also working on Layer-By-Layer (LBL) Self Assemble (SAM) type of mono- and multilayer film deposition using various anionic and cationic types of materials. A comparison of these SAM films with the films fabricated by LB technique is going on in our Laboratory. Also emphasis has been given on domain structure analysis and formation of nanocrystalline films by LB as well as by SAM techniques.

At K. U. Leuven, Belgium I am working on the organization behaviour of organic dyes on LB films and Fluorescence Resonance Energy Transfer (FRET) between suitable donor-acceptor fluorophore. Along with Prof. A. Volodine, Department of Physics, K. U. Leuven, we are trying to measure the mechanical properties of clay particles.

## Paper Published in Peer Reviewed Journals:

2008

1. Immobilization of single strand DNA on solid substrate  
S. A. Hussain, P. K. Paul, D. Dey, D. Bhattacharjee and S. Sinha  
Chemical Physics letter (Article in press)
2. Photophysical characterizations of 2-(4-Biphenyl)-5 phenyl-1, 3, 4- oxadiazole in restricted geometry  
P. K. Paul, S. A. Hussain and D. Bhattacharjee  
Journal of Luminescence 128/1 (2008)41-50  
<http://dx.doi.org/10.1016/j.jlumin.2007.05.001>
3. Preparation and characterization of an anionic dye-polycation molecular films by electrostatic Layer-by-Layer adsorption process  
D. Dey, S. A. Hussain, R. K. Nath and D. Bhattacharjee  
Spectrochimica Acta A (article in press)

2007

1. 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  
<http://dx.doi.org/10.1088/0256-307X/24/7/071>
2. 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  
<http://dx.doi.org/10.1016/j.saa.2006.11.024>
3. 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  
<http://dx.doi.org/10.1016/j.jcis.2007.03.055>
4. 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  
<http://dx.doi.org/10.1088/0256-307X/24/5/057>

2006

1. 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  
<http://dx.doi.org/10.1016/j.saa.2005.12.021>
2. 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  
<http://dx.doi.org/10.1016/j.jcis.2006.02.036>
3. 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  
<http://dx.doi.org/10.1016/j.jpcs.2006.07.011>

2005

1. 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  
<http://dx.doi.org/10.1016/j.cplett.2005.02.060>
2. 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  
<http://dx.doi.org/10.1016/j.jlumin.2005.01.001>
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  
<http://dx.doi.org/10.1016/j.saa.2004.09.008>
4. 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)  
<http://www.iacs.res.in/ijp/september05/abssep05.pdf>
5. 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

### **Paper under communication:**

1. Orientation of Carbazole molecule in the mixed Langmuir-Blodgett films  
S. Biswas, D. Bhattacharjee and S. A. Hussain\*  
Submitted to Macromolecules: An Indian Journal
2. Layer-by-Layer Self Assembled Films of Rosebengal  
D. Dey, D. Bhattacharjee, S. A. Hussain\*  
Submitted to Chinese Journal of Chemical Physics (IOP)
3. 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  
Submitted to Journal of Luminescence
4. Monolayer Characteristics of pyrene mixed with stearic acid at the air-water interface  
Md. N. Islam, D. Bhattacharjee, S. A. Hussain\*  
Submitted to Surface review letters
5. Monolayer characteristics of P-terphenyl along with PMMA/SA at the air-water interface  
Md. N. Islam, D. Bhattacharjee, S. A. Hussain\*  
Submitted to Colloid and Surface A

### **Paper presented in National /International Seminars/symposia:**

1. 50th Annual Technical and National Conference on Current Trends of research in Science and Technology under the auspices of Assam Science Society.  
Department of Physics, Guwahati University, Assam (January 28 & 29, 2005)
2. National Symposium on Spectroscopy and its application (NSSS-2006)  
Organized by Department of Spectroscopy, Indian association for Cultivation of Science Jadavpur, Kolkata, India (January 18-20, 2006).
3. National Conference on Disperse Systems  
Organized by Department of Chemistry, Assam University  
Silchar-788 011 Assam (November 23-25, 2006)

4. CMDAYS-05

Department of Physics, Berhampur University  
Berhampur-760007, Orissa

5. 50th ANNUAL TECHNICAL SESSION and National Conference On Current Trends of research in Science and Technology under the auspices of Assam Science Society  
Department of Physics, Guwahati University, Guwahati  
January 28 & 29, 2005

6. PANE conference – 2004

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

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

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

8. CMDAYS-04

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

9. Third Regional Conference on Physics Research in North East India.

Organized by Department of Physics  
Dibrugarh University, Dibrugarh-786004, Assam, INDIA.  
November 09, 2002

## Research Guidance:

### Ph. D. Guidance:

At present two students are doing their Ph. D. work in the Department of Physics, Tripura University, under my guidance.

1. Mr. Dhananjay Dey

**Title of Ph.D. Thesis:** "Spectroscopic Characterizations of Organized Molecular Assemblies in Ultrathin Films Fabricated by Layer- by- Layer (LbL) Self Assembled Technique".

2. Md. Nurul Islam

**Title of Ph.D. Thesis:** "Investigation of optical properties of some molecules into restricted geometry"

### **M. Phill. dissertation:**

Three students have completed their M.Phil. dissertation under mu guidance.

#### 1. Namita Das

Title of dissertation: "Photophysical Characterizations of Organized Molecular Assemblies of Pyrene in Mixed LB Films".

#### 2. Shirshendu Choudhury

Title of dissertation: "Optical characterizations of ultrathin films fabricated by Layer by Layer (LbL ) technique".

#### 3. Nabanita Chackraborty

Title of dissertation: "Spectroscopic characterizations of self assembled films of rosebengal".

I hereby declare that the particulars given above are true to the best of my knowledge and belief.

Syed Arshad Hussain

### **Reference:**

Dr. D. Bhattacharjee  
Reader  
Department of Physics  
Tripura University  
Suryamaninagar-799130  
Tripura, India  
Email: [debu\\_bhat@hotmail.com](mailto:debu_bhat@hotmail.com)  
[tuphysic@sancharnet.in](mailto:tuphysic@sancharnet.in)  
Fax: +913812374801 (O)  
Ph. +913812375317 (O)  
+919436130608 (M)

Prof. Robert Schoonheydt  
Centre for Surface Chemistry and Catalysis  
Department of Microbial and Molecular  
Systems (M<sup>2</sup>S)  
Kasteelpark Arenberg 23 - bus 2461, 3001  
Heverlee, Belgium  
Tel: +32 16 321592 or +32 16 321610  
Fax: +32 16 321998  
Email: [robert.schoonheydt@biw.kuleuven.be](mailto:robert.schoonheydt@biw.kuleuven.be)

Dr. R. K. Nath  
Reader & Head  
Department of Chemistry  
Tripura University  
Suryamaninagar-799130  
Tripura, India  
Email: [rknath1959@hotmail.com](mailto:rknath1959@hotmail.com)  
Fax: +913812374801 (O)

