




**DEPARTMENT OF CHEMISTRY**  
**DYAL SINGH COLLEGE, UNIVERSITY OF DELHI**  
**FACULTY DETAIL**



| Title                                                                                                                                                                                   | Prof.                                                                                                  | First Name | <b>ANIL KUMAR</b> | Last Name | <b>NAIN</b> | Photograph                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------|-------------------|-----------|-------------|-------------------------------------------------------------------------------------|
| Designation                                                                                                                                                                             | <b>PROFESSOR</b>                                                                                       |            |                   |           |             |  |
| Address                                                                                                                                                                                 | DEPARTMENT OF CHEMISTRY<br>DYAL SINGH COLLEGE (UNIVERSITY OF DELHI)<br>LODHI ROAD, NEW DELHI – 110 003 |            |                   |           |             |                                                                                     |
| Phone No Office                                                                                                                                                                         | 011-24367819, 24365948, 24365606 (FAX)                                                                 |            |                   |           |             |                                                                                     |
| Residence                                                                                                                                                                               | ---                                                                                                    |            |                   |           |             |                                                                                     |
| Mobile                                                                                                                                                                                  | 09810081160, 07289908842                                                                               |            |                   |           |             |                                                                                     |
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| Web-Page                                                                                                                                                                                | ---                                                                                                    |            |                   |           |             |                                                                                     |
| Educational Qualifications                                                                                                                                                              |                                                                                                        |            |                   |           |             |                                                                                     |
| Degree                                                                                                                                                                                  | Institution                                                                                            |            |                   |           | Year        |                                                                                     |
| <b>B.Sc.</b>                                                                                                                                                                            | Jamia Millia Islamia (Central University), New Delhi                                                   |            |                   |           | 1990        |                                                                                     |
| <b>M.Sc. (Chemistry)</b>                                                                                                                                                                | Jamia Millia Islamia (Central University), New Delhi                                                   |            |                   |           | 1992        |                                                                                     |
| <b>Ph.D. (Chemistry)</b>                                                                                                                                                                | Jamia Millia Islamia (Central University), New Delhi                                                   |            |                   |           | 1996        |                                                                                     |
| <b>D.Sc. (Chemistry)</b>                                                                                                                                                                | University of Allahabad, Allahabad                                                                     |            |                   |           | 2007        |                                                                                     |
| Career Profile                                                                                                                                                                          |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Senior Research Fellow (SRF)</b> , April 01, 1996 to March 31, 1998 (CSIR) at the Department of Chemistry, Jamia Millia Islamia, New Delhi.                                        |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Research Associate (RA)</b> , May 19, 1998 to April 30, 2003, (CSIR) at the Department of Chemistry, Jamia Millia Islamia, New Delhi.                                              |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Project Officer</b> , May 01, 2003 to March 2004, at National Board of Accreditation (NBA), All India Council for Technical Education (AICTE), New Delhi.                          |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Young Scientist Fellow</b> , April 01, 2004 to March 31, 2007 under SERC Fast Track Young Scientist Scheme (DST), at the Department of Chemistry, Jamia Millia Islamia, New Delhi. |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Lecturer</b> (Chemistry), November 01, 2004 to November 06, 2008, at Dyal Singh College, DU.                                                                                       |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Reader</b> (Chemistry), December 07, 2008 to December 06, 2011, at Dyal Singh College, DU.                                                                                         |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Associate Professor</b> (Chemistry), December 07, 2011 to July 17, 2018, at Dyal Singh College, DU                                                                                 |                                                                                                        |            |                   |           |             |                                                                                     |
| ⇒ <b>Professor</b> (Chemistry), July 18, 2018 to till date, at Dyal Singh College (University of Delhi).                                                                                |                                                                                                        |            |                   |           |             |                                                                                     |
| Administrative Assignments (From 1 <sup>st</sup> July 2017 onwards)                                                                                                                     |                                                                                                        |            |                   |           |             |                                                                                     |
| <b>Worked in various committees of the College and Department of Chemistry</b>                                                                                                          |                                                                                                        |            |                   |           |             |                                                                                     |
| Areas of Interest / Specialization                                                                                                                                                      |                                                                                                        |            |                   |           |             |                                                                                     |
| <b>Molecular Interactions in Solution (Physical Chemistry)</b>                                                                                                                          |                                                                                                        |            |                   |           |             |                                                                                     |
| • Biophysical Chemistry                                                                                                                                                                 |                                                                                                        |            |                   |           |             |                                                                                     |
| • Physicochemical studies of non-electrolyte multicomponent systems                                                                                                                     |                                                                                                        |            |                   |           |             |                                                                                     |

- Physicochemical studies of homoeopathic medicine formulations

Thermodynamic, physicochemical and acoustical studies of molecular interactions in binary and ternary solvent systems, extremely diluted solutions (Homoeopathic medicines) and solute-solute and solute-solvent interactions in solutions containing electrolytes/amino acids/carbohydrates/ drugs/surfactants by using physical properties such as density, viscosity, sound speed, refractive index, conductivity, etc., their excess functions and other derived parameters from these properties.

#### Subjects Taught

#### Physical Chemistry: At UG level

Gaseous state, Liquid State, Solid State, Liquid Crystals, Chemical Bonding, Chemical Thermodynamics, Chemical Kinetics, Electrochemistry, Solutions, Phase Equilibria, Ionic Equilibria, Adsorption, Catalysis, Photochemistry.

#### Research Guidance

#### Ph.D. Awarded under Supervision: 07

1. Ms. Rajni Sharma (2011, as Co-Supervisor, Jamia Millia Islamia, New Delhi)

Experimental and Theoretical Studies Molecular Interactions in Multicomponent Systems Containing Industrially Important Organic Solvents.

2. Ms. Renu Pal

Probing Solute-Solute and Solute-Solvent Interactions in Amino Acid + Carbohydrate/Drug+ Water Systems Using Physicochemical Methods.

3. Ms. Monika Lather

Physicochemical Studies of Interactions of Selected Amino Acids with Carbohydrates/Drugs in Aqueous Medium.

4. Ms. Preeti Droliya

Physicochemical Studies of Molecular Interactions in Multicomponent Systems.

5. Ms. Neha Chaudhary

Physicochemical Studies of Molecular Interactions in Multicomponent Solvent Systems Containing Ionic Liquids.

6. Ms. Jyoti Gupta

Physicochemical Studies of Interactions of Selected Amino Acids in Aqueous-Drug Media.

7. Ms. Ankita

Physicochemical Studies of Interactions in Solutions Containing Drugs in Mixed Aqueous Media.

#### Ph.D. students working under Supervision: 01

1. Nidhi

Physicochemical and Spectroscopic Studies of Molecular Interactions in Industrially Important Multi-Component Solvent Systems.

#### Publications Profile (From 1<sup>st</sup> July 2017 onwards)

**Research Articles Published in Refereed Journals: 173**

**Citations: 3475**

**h-Index: 36 (Scopus)**

**Research Publications (since 1<sup>st</sup> July 2017): 38**

**2022: 02**

**A. K. Nain**, Study of intermolecular interactions in binary mixtures of methyl acrylate with benzene and methyl substituted benzenes at different temperatures: An experimental and theoretical approach, *Chin. J. Chem. Eng.*, 44, 222-246 (2022). **(Impact Factor: 3.898)**

N. Chaudhary and **A. K. Nain**, Densities, ultrasonic speeds, refractive indices, excess and partial molar properties of polyethylene glycol 200 + benzyl methacrylate binary mixtures at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 346, 117923, (2022). **(Impact Factor: 6.633)**

**2021: 09**

N. Chaudhary and **A. K. Nain**, Correlation between intermolecular interactions and excess properties of polyethylene glycol 400 + benzyl methacrylate binary mixtures at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 340, 116866 (2021). **(Impact Factor: 6.633)**

**A. K. Nain** and D. Chand, Correlation between molecular interactions and excess thermodynamic parameters of binary mixtures, *J. Pure Appl. Ultrason.*, 43, 8-16 (2021). **(UGC-Care List)**

Y. Bisht and **A. K. Nain**, Solute-solute and solute-solvent interactions of *l*-methionine, *l*-threonine and *l*-histidine in aqueous-carbohydrate solutions using Kirkwood-Buff theory: A theoretical study, *Organic & Medicinal Chem. I.J.*, 11, 555806 (2021). **(Impact Factor: 1.378)**

N. Chaudhary and **A. K. Nain**, Physicochemical studies of intermolecular interactions in 1-butyl-3-methylimidazolium tetrafluoroborate + benzonitrile binary mixtures at temperatures from 293.15 to 318.15 K, *Phys. Chem. Liq.*, 59, 358-381 (2021). **(Impact Factor: 1.838)**

A. K. Jangir, **A. K. Nain** and K. C. Kuperkar, Insight into structural properties and molecular interactions of maline (choline chloride + malonic acid) and 1, 4- butanediol based pseudo-binary mixture: A thermophysical, spectral, and simulation portrayal, *J. Mol. Liq.*, 334, 116050 (2021). **(Impact Factor: 6.633)**

Ankita and **A. K. Nain**, Probing interactions and hydration behaviour of drug sodium salicylate in aqueous solutions of D-xylose/L-arabinose: Volumetric, acoustic and viscometric approach, *J. Mol. Liq.*, 333, 115985, (2021). **(Impact Factor: 6.633)**

**A. K. Nain**, Insight into intermolecular interactions in benzonitrile + methyl acrylate/ethyl acrylate/*n*-butyl acrylate/*t*-butyl acrylate binary mixtures at temperatures from 293.15 to 318.15 K: Ultrasonic and viscometric study, *J. Mol. Liq.*, 331, 115599 (2021). **(Impact Factor: 6.633)**

**A. K. Nain**, Physicochemical study of intermolecular interactions in binary mixtures of acetonitrile with alkyl acrylate monomers at temperatures from 293.15 to 318.15 K by using ultrasonic speed and viscosity data, *J. Chem. Thermodyn.*, 156, 106387 (2021). **(Impact Factor: 3.269)**

**A. K. Nain**, Interactions of some  $\alpha$ -amino acids with antibacterial drug gentamicin sulphate in aqueous medium probed by using physicochemical approaches, *J. Mol. Liq.*, 321, 114757 (2021). **(Impact Factor: 6.633)**

**2020: 16**

Ankita, D. Chand and **A. K. Nain**, Insight into solute-solute and solute-solvent interactions of semicarbazide hydrochloride in aqueous-D-glucose/D-sucrose solutions at temperatures from 293.15 to 318.15 K, *Chin. J. Chem. Eng.*, 28, 3086-3095 (2020). **(Impact Factor: 3.898)**

**A. K. Nain**, Insight into solute-solute and solute-solvent interactions of *l*-proline in aqueous-D-xylose/L-arabinose solutions by using physicochemical methods at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 318, 114190 (2020). **(Impact Factor: 6.633)**

Ankita and **A. K. Nain**, Viscosity *B*-coefficients and thermodynamics of viscous flow of *l*-arginine/*l*-histidine in aqueous-gentamicin sulphate at temperatures from 298.15 to 318.15 K, *Organic & Medicinal Chem. I.J.*, 10, 555778 (2020). **(Impact Factor: 1.378)**

N. Chaudhary and **A. K. Nain**, Volumetric, acoustic and viscometric studies intermolecular interactions in polyethylene glycol 400 + alkyl acrylate binary mixtures at temperatures from 293.15 to 318.15 K, *Phys. Chem. Liq.*, 58, 736-759 (2020). **(Impact Factor: 1.838)**

**A. K. Nain**, Volumetric and ultrasonic study of *l*-arginine/*l*-histidine and gentamicin sulphate in aqueous medium at different temperatures, *J. Mol. Liq.*, 315, 113736 (2020). **(Impact Factor: 6.633)**

P. Droliya, D. Chand and **A. K. Nain**, Experimental and theoretical studies of transport and optical properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 to 318.15 K, *Indian J. Chem. A*, 59, 1457-1469 (2020). **(Impact Factor: 0.491)**

N. Chaudhary and **A. K. Nain**, Densities, ultrasonic speeds, viscosities, refractive indices and excess properties of 1-butyl-3-methylimidazolium tetrafluoroborate + N-methylacetamide binary mixtures at different temperatures, *J. Chem. Eng. Data*, 65, 1447-1459 (2020). **(Impact Factor: 3.119)**

Ankita, D. Chand and **A. K. Nain**, Molecular interactions of drug semicarbazide hydrochloride in aqueous-D-xylose/*L*-arabinose solutions at different temperatures: Volumetric, acoustic and viscometric study, *J. Chem. Thermodyn.*, 146, 106106 (2020). **(Impact Factor: 3.269)**

N. Chaudhary and **A. K. Nain**, Densities, ultrasonic speeds, viscosities, refractive indices, excess and partial molar properties of binary mixtures of 1-butyl-3-methylimidazolium tetrafluoroborate with formamide at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 305, 112816 (2020). **(Impact Factor: 6.633)**

J. Gupta, D. Chand and **A. K. Nain**, Study to reconnoiter solvation consequences of *l*-arginine/*l*-histidine and sodium salicylate in aqueous medium probed by physicochemical approach in the temperature range (293.15 – 318.15) K, *J. Mol. Liq.*, 305, 112848 (2020). **(Impact Factor: 6.633)**

J. Gupta and **A. K. Nain**, Correlation between physicochemical properties and non-covalent interactions involving *l*-arginine/*l*-histidine and semicarbazide hydrochloride at temperatures from 293.15 to 318.15 K, *J. Chem. Thermodyn.*, 144, 106067 (2020). **(Impact Factor: 3.269)**

J. Gupta, D. Chand and **A. K. Nain**, Insight into interactions of *l*-arginine/*l*-histidine with drug betaine hydrochloride in aqueous medium at different temperatures by using physicochemical methods, *Organic & Medicinal Chem. I.J.*, 9, 555763 (2020). **(Impact Factor: 1.378)**

Ankita and **A. K. Nain**, Study of solvation behavior and interactions of drug betaine hydrochloride in aqueous-D-xylose/*L*-arabinose solutions at different temperatures by using volumetric, acoustic and viscometric methods, *J. Chem. Thermodyn.*, 143, 106046 (2020). **(Impact Factor: 3.269)**

Ankita and **A. K. Nain**, Study on the interactions of drug isoniazid in aqueous-D-xylose/*L*-arabinose solutions at different temperatures using volumetric, acoustic and viscometric approaches, *J. Mol. Liq.*, 298, 112086 (2020). **(Impact Factor: 6.633)**

Ankita and **A. K. Nain**, Solute-solute and solute-solvent interactions of drug sodium salicylate in aqueous-glucose/sucrose solutions at temperatures from 293.15 to 318.15 K: A physicochemical study, *J. Mol. Liq.*, 298, 112006 (2020). **(Impact Factor: 6.633)**

N. Chaudhary and **A. K. Nain**, Volumetric, ultrasonic, viscometric and refractive index studies of molecular interactions in binary mixtures of 1-butyl-3-methylimidazolium tetrafluoroborate with methyl acrylate at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 297, 111890 (2020). **(Impact Factor: 6.633)**

**2019: 06**

J. Gupta and **A. K. Nain**, Study of solute-solute and solute-solvent interactions of gentamicin sulphate in aqueous-*l*-asparagine/*l*-glutamine solutions at different temperatures by using physicochemical methods, *J. Mol. Liq.*, 293, 111547 (2019). **(Impact Factor: 6.633)**

J. Gupta and **A. K. Nain**, Effect of concentration and temperature on apparent molar properties of homologous  $\alpha$ -amino acids in aqueous-semicarbazide hydrochloride solutions: A quest on the concept of

kosmotropic/chaotropic behaviour of amino acids, *J. Chem. Thermodyn.*, 135, 9-26 (2019). (Impact Factor: 3.269)

Ankita and A. K. Nain, Volumetric, acoustic and viscometric studies of solute-solute and solute-solvent interactions of isoniazid in aqueous-glucose/sucrose solutions at temperatures from 293.15 to 318.15 K, *J. Chem. Thermodyn.*, 133, 123-134 (2019). (Impact Factor: 3.269)

Y. Bisht and A. K. Nain, Study of Kirkwood-Buff integrals of selected polar and nonpolar amino acids in aqueous-streptomycin sulphate solutions at 298.15 K, *Indian J. Chem. A*, 58, 281-287 (2019). (Impact Factor: 0.491)

J. Gupta and A. K. Nain, Physicochemical study of solute-solute and solute-solvent interactions of homologous series of  $\alpha$ -amino acids in aqueous-isoniazid solutions at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 278, 262-278 (2019). (Impact Factor: 6.633)

P. Droliya and A. K. Nain, Densities, speeds of sound and excess properties of benzonitrile + methyl methacrylate, or + ethyl methacrylate, or + butyl methacrylate binary mixtures at temperatures from 293.15 to 318.15 K, *J. Chem. Thermodyn.*, 132, 142-154 (2019). (Impact Factor: 3.269)

#### 2018: 04

N. Chaudhary and A. K. Nain, Densities, ultrasonic speeds, refractive indices, excess and partial molar properties of polyethylene glycol 200 + methyl acrylate or ethyl acrylate or *n*-butyl acrylate binary mixtures at temperatures from 293.15 to 318.15 K, *J. Mol. Liq.*, 271, 501-513 (2018). (Impact Factor: 6.633)

P. Droliya and A. K. Nain, Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 to 318.15 K, *J. Chem. Thermodyn.*, 123, 146-157 (2018). (Impact Factor: 3.269)

A. K. Nain, P. Droliya and J. Gupta, Deviations in viscosities and thermodynamics of viscous flow of binary mixtures of methyl acrylate with 1-alkanols at different temperatures, *Indian J. Chem. A*, 57, 761-769 (2018). (Impact Factor: 0.491)

J. Gupta and A. K. Nain, Study of solute-solute and solute-solvent interactions of streptomycin sulphate in aqueous-*l*-asparagine/*l*-glutamine solutions at different temperatures by using physicochemical methods, *J. Mol. Liq.*, 249, 666-676 (2018). (Impact Factor: 6.633)

#### 2017: 01

A. K. Nain, P. Droliya, J. Gupta, Theoretical study of molecular interactions of amino acids in aqueous-carbohydrate solutions by using scaled particle theory, *Indian J. Chem. A*, 56, 939-944 (2017). (Impact Factor: 0.491)

Conference Organization/ Presentations (From 1<sup>st</sup> July 2017 onwards)

#### Research papers presented in conference/symposia from our research work: 06

Ankita and A. K. Nain, Study of solute-solute and solute-solvent interactions of drug semicarbazide hydrochloride in aqueous-glucose solutions at different temperatures, *National seminar on Technology for Environmental Sustainability, Socio-Economic Responsibility and Associated Entrepreneurial Opportunities in 21<sup>st</sup> Century*, March 8-9, 2019 at Sri Aurobindo College, University of Delhi, New Delhi.

J. Gupta and A. K. Nain, Investigation on molecular interactions of polar amino acids with aqueous betaine hydrochloride solutions by volumetric and viscometric methods at six equidistant temperature, *National seminar on Technology for Environmental Sustainability, Socio-Economic Responsibility and Associated Entrepreneurial Opportunities in 21<sup>st</sup> Century*, March 8-9, 2019 (Sri Aurobindo College, University of Delhi, New Delhi).

N. Chaudhary and **A. K. Nain**, Densities, ultrasonic speeds, and excess properties of binary mixtures of polyethylene glycol 400 with some acrylates at different temperatures, **National seminar on Technology for Environmental Sustainability, Socio-Economic Responsibility and Associated Entrepreneurial Opportunities in 21<sup>st</sup> Century**, March 8-9, 2019 (Sri Aurobindo College, University of Delhi, New Delhi).

N. Chaudhary and **A. K. Nain**, Densities, ultrasonic speeds, and excess properties of binary mixtures of polyethylene glycol 200 with some acrylates at different temperature, **National conference on Recent Trends and Advancements in Chemical Sciences**, March 29-31, 2019 (Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi).

J. Gupta and **A. K. Nain**, Apparent molar properties and viscometric studies of interactions of some polar amino acids in aqueous-semicarbazide hydrochloride solutions at different temperatures, **National conference on Recent Trends and Advancements in Chemical Sciences**, March 29-31, 2019 (Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi).

Ankita and **A. K. Nain**, Investigation of volumetric and acoustic properties of drug isoniazid in aqueous-glucose solutions at different temperatures, **National conference on Recent Trends and Advancements in Chemical Sciences**, March 29-31, 2019 (Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi).

#### Research Projects (Major Grants/Research Collaboration) (From 1<sup>st</sup> July 2017 onwards)

**Title of the Project:** Physicochemical studies of homoeopathic drug formulations by using volumetric, acoustic, viscometric, optical and conductometric measurements

**Position in Project:** Principal Investigator.

**Period: 2017-2022 (ongoing)**                      **Grant: 44.678 Lakhs**

**Funding Agency:** Central Council for Research in Homoeopathy (CCRH)

#### Awards and Distinctions (From 1<sup>st</sup> July 2017 onwards)

- ⇒ **Included the World's Top 2% Scientists 2020 with Global Rank #227** out of total 55,697 researchers in Chemical Engineering Category in the rankings released by Stanford University, USA. More exactly, included in top 0.41% in this field.
- ⇒ **Placed at rank #10 among the 46 researchers from India** included in the list of top 2% researchers in Chemical Engineering Category.
- ⇒ **Placed at rank #2 in rank % within individual fields among the 18 researchers** from University of Delhi included in the list of top 2% researchers in all fields in C-Score and % ranking of all fields.
- ⇒ Ranked in **AD Scientific index 2021** rankings of the world based on Google Scholar data of nearly **~one million researchers from all subject areas**. Ranked **26<sup>th</sup> in University of Delhi; 1446<sup>th</sup> in all India; 12739<sup>th</sup> in Asia** and **88677<sup>th</sup> in the world**.
- ⇒ **Included in the World's Top 2% Scientists 2021** released on basis of Scopus data of research analysis by Stanford University, USA with **Global Rank 343** out of 66,189 researchers in Chemical Engineering Category. More exactly in the top 0.51% in this field.
- ⇒ **Placed at rank #2 in rank % within individual fields among the 13 researchers** from University of Delhi included in the list of top 2% researchers in all fields in C-Score and % ranking of all fields.
- ⇒ Ranked in **AD Scientific index 2022** rankings of the world based on Google Scholar data of nearly **~one million researchers from all subject areas**. I am ranked **18<sup>th</sup> in University of Delhi; 1319<sup>th</sup> in all India; 12733<sup>th</sup> in Asia** and **101526<sup>th</sup> in the world**.

#### Association With Professional Bodies

- ⇒ Member in the **Editorial Advisory Board** of **Journal of Chemical Thermodynamics**, Elsevier Ltd., The Netherlands (2016 onwards).
- ⇒ **Associate Editor** in the **Organic and Medicinal Chemistry International Journal**, Juniper Pub., USA.
- ⇒ Member **Departmental Research Committee** in the Department of Chemistry, **Sir. J.C. Bose University of Science and Technology**, Faridabad (2019-20).
- ⇒ Member in the **Board of Associate Editors** of the **Journal of the Indian Chemical Society** (Physical Chemistry Section), ICS, Kolkata (2008-2010).
- ⇒ **Assistant Editor** of the **Journal of the Acoustical Society of India**, NPL, New Delhi (2009-14).
- ⇒ Member in the **Publication Committee** of the **Journal of Pure and Applied Ultrasonics**, Ultrasonics Society of India (USI), NPL, New Delhi (2007-2011).
- ⇒ Member in the **Executive Council** of the **USI**, NPL, New Delhi (2009-2011).
- ⇒ **Life Fellow** (LF-93) of the **Ultrasonic Society of India**, NPL, New Delhi.
- ⇒ **Life member of the**
  - **Ultrasonic Society of India** (Membership No. LM – 120) (2001-2010)
  - **Indian Council of Chemists** (Membership No. LF – 575)
  - **Acoustical Society of India** (Membership No. LM – 567)
  - **Indian Chemical Society** (Membership No. F/6244 LM, 2003)
  - **Indian Society of Analytical Scientists** (Membership No. LM-2071)

#### Other Activities like MOOCs/ Patents, etc. (From 1<sup>st</sup> July 2017 onwards)

- ⇒ **Reviewer of Research Papers for Journals: 53 Journals**
  - Foreign Journals: 44
  - Indian Journals: 09
- ⇒ **Evaluator and Examiner of Ph.D. theses of various Universities: 10**
- ⇒ Chaired 02 Sessions in National seminar on **“Technology for Environmental Sustainability, Socio-Economic Responsibility and Associated Entrepreneurial Opportunities in 21<sup>st</sup> Century”**, March 8-9, 2019 at Sri Aurobindo College, University of Delhi, New Delhi.



Signature of Faculty Member