

Dr. NAVED ANJUM I MALEK

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RESEARCH INTEREST

- Development of novel solvents (ionic liquids) and their application in various fields including Chemical Thermodynamics, Solution Chemistry, Surface Chemistry and Cellulose Chemistry.
- Ionic Liquids as novel Surfactant Systems.
- Carbohydrate Chemistry including Cellulose Chemistry.
- Chemical Thermodynamics and Solution Chemistry of pure and multi-component liquid mixtures.

PROFESIONAL EXPERIENCE

August 2008-At Present:	Assistant Professor S.V. National Institute of Technology, Surat, India
Nov 2014-Oct 2015:	Post Doctoral Fellow Instituto de Quimica, Universidade de Sao Paulo, Sao Paulo, Brazil
Jan 2007-Aug 2008	Research Associate Analytical Research Laboratory Cadila Pharmaceuticals, Dholka, Ahmedabad
Jan 2006-Jan 2007	Visiting Lecturer in Engineering Chemistry Reliance Industries Ltd. With SVNIT
Sept 2005-Jan 2007	Teaching Assistant in Chemistry S.V. National Institute of Technology, Surat, India

PROFESSIONAL AWARDS, FELLOWSHIPS RECEIVED

2010 DST Young Scientist Award (Under Fast Track Scheme)

2015 Post Doc Fellowship from State of Sao Paulo, Sao Paulo, Brazil.

RESEARCH PROJECTS

1. Department of Science and Technology (DST), New Delhi (Registration No. 0028/ 2010 Dated April 20, 2010). Scheme: DST Young Scientist Award under Fast Track Scheme
2. Council of Scientific and Industrial Research (CSIR), New Delhi (01(2545)/11/EMR- -II dated 12/12/2011).
3. Research Grants to Assistant Professor by S.V. National Institute of Technology, Surat.
4. Have Guided One student for his thesis leading to his PhD and 8 students for their Master Dissertation leading to their MSc Degree.

ACHIEVEMENTS

- 2013 Best Presentation award by the Him Science Congress Association (HSCA) during March 2013.
- 2009 Summer Research Faculty Fellowship at IIT-Delhi. New Delhi, India
- 2006 Best presentation award by the scientific society of the Indian Thermodynamic Society during the Scientific Meeting in Oct-06.
- 2005 Gujarat State Research Scholarship for Research.
- 2005 Volunteer community award for the help provided to the Flood Affected area of Surat City, Gujarat.
- Hindi Veenet Certificate (Equivalent to B.S in Hindi)
- Certificate in Sanskrit Language of the Level of BS in Sanskrit
- Many Prizes at the College and School Level at various competitions.

PUBLICATIONS

- 1) Thermophysical, acoustic and optical properties of binary mixtures of imidazolium based ionic liquids + polyethylene glycol, Heta Patel, Zuber S. Vaid, Utkarsh U. More, Sushma P. Ijardar^{b,c}, **Naved I. Malek**, J. of Chemical Thermodynamics, 99, 40-53, **2016**. doi:10.1016/j.jct.2016.02.025.
- 2) Experimental and theoretical excess molar properties of imidazolium based ionic liquids with isomers of butanol. Zuber S. Vaid, Utkarsh U. More, Shantilal B Oswal, **Naved I Malek**, Thermochemica Acta 634, 38-47, **2016**. doi:10.1016/j.tca.2016.03.026.
- 3) Effect of Imidazolium Based Ionic Liquids on the Aggregation Behavior of Twin Tailed Cationic Gemini Surfactant in Aqueous Solution. Utkarsh More, Zuber Vaid, Sargam Rajput, Y Kadam, **Naved I Malek**. Journal of Dispersion Science and Technology, **Accepted. 2016**. DOI:10.1080/01932691.2016.1170610.
- 4) Tuning the physicochemical properties of protic-aprotic ionic liquids upon reciprocal binary mixing. Pankaj Bharmoria, Tushar J Trivedi, **Naved I Malek**, Arvind Kumar. Indian Journal of Chemistry Vol. 55A, **May 2016**
- 5) Binary mixtures of ([C₄mim][NTf₂] + molecular organic solvents): Thermophysical, acoustic and transport properties at various compositions and temperatures. **Naved I. Malek**, Sushma P. Ijardar. J. of Chemical Thermodynamics, 93, 75-85, **2016**. DOI:10.1016/j.jphotochem.2016.01.015
- 6) Influence of imidazolium ionic liquids on fluorescence of push-pull diphenylbutadienes, Anuji K. Vasua Jagadish Katla **Naved I. Malek**, Sriram Kanvah, Journal of Photochemistry and Photobiology A: Chemistry, 321 (1) 55-62, **2016**. DOI:10.1016/j.jphotochem.2016.01.015.
- 7) Interaction between Ionic Liquids and Gemini Surfactant: A Detailed Investigation into the Role of Ionic Liquids in Modifying Properties of Aqueous Gemini Surfactant, U. More, P. Kumari, Z. Vaid, and K. Behera, **Naved I Malek**, Journal of Surfactants and Detergents 19 (1) 75-89, **2016**. DOI:10.1007/s11743-015-1747-x.
- 8) Imidazole-catalyzed esterification of cellulose in ionic liquid/molecular solvents: A multi-technique approach to probe effects of the medium. Paulo A.R. Pires, **Naved I Malek**, Thaís C. Teixeira, Thaís A. Bioni, Haq Nawaz, Omar A. El

- Seoud. *Industrial Crops and Products* 77, 180–189, **2015**. DOI:10.1007/s11743-015-1747-x
- 9) Probing Cellulose Acetylation in Binary Mixtures of an Ionic Liquid with Dimethylsulfoxide and Sulfolane by Chemical Kinetics, Viscometry, Spectroscopy, and Molecular Dynamics Simulations. Haq Nawaz, Paulo A. R. Pires, Elizabeth P. G. Arêas, **Naved I. Malek** and Omar A. El Seoud. *Macromolecular Chemical Physics*, 216 (24) 2368-2376, **2015**. DOI: 10.1002/macp.201500315.
 - 10) Ionic-liquid-based surfactants with unsaturated head group: synthesis and micellar properties of 1-(n-alkyl)-3-vinylimidazolium bromides. Naved I. Malek, Zuber S. Vaid, Utkarsh U. More, Omar A. El Seoud. *Colloid Polym Sci* 293,3213–3224, **2015**. DOI: doi:10.1007/s00396-015-3746-x.
 - 11) Study of stability and thermodynamic properties of water-in-diesel nanoemulsion fuels with nano-Al additive. Rakhi N. Mehta, Utkarsh More, **Naved I Malek**, Mousumi Chakraborty, Parimal A. Parikh. *Appl Nanosci* 5 (8) 891–900, **2015**. DOI: 10.1007/s13204-014-0385-3.
 - 12) Molecular interaction study through experimental and theoretical volumetric, transport and refractive properties of N-ethylaniline with aryl and alkyl ethers at several temperatures. Zubin R. Master, Zuber S. Vaid, Utkarsh U. More & **Naved I Malek**. *Physics and Chemistry of Liquids*, 54 (2) 223-244, **2016**. DOI: 10.1080/00319104.2015.1074047.
 - 13) Investigation on thermophysical and excess properties of binary mixtures of imidazolium based ionic liquids at temperatures (293.15 to 323.15) K: III [Cnmim][PF6] (n = 4, 6, 8) + THF. Zuber Vaid, Utkarsh More, Sushma P. Ijardar, Naved I. Malek. *J. of Chemical Thermodynamics*, 86, 143-153, **2015**. DOI: 10.1016/j.jct.2015.02.011.
 - 14) Composition and temperature dependence excess properties of binary mixtures of imidazolium based ionic liquids: II [Cnmim][PF6] + propylamine, Z. Vaid, U. More, R. Gardas, **Naved I Malek** and S.P.Ijardar, *J. of Solution Chemistry*. 44, 718-741, **2015**. DOI: 10.1007/s10953-015-0325-1.
 - 15) Effect of [C_nmim][Br] Based Ionic Liquids on the Aggregation Behavior of Tetradecyltrimethylammonium bromide in Aqueous Medium, U. More, Z. Vaid, P. Bhamoria, A. Kumar **Naved I Malek**, *J. of Solution Chemistry*. 44, 850-874, **2015**. DOI: 10.1007/s10953-015-0318-0.

- 16) A reciprocal binary mixture of protic/aprotic ionic liquids as a deep eutectic solvent: physicochemical behaviour and application towards agarose processing. Pankaj Bharmoria, Krishnaiah Damarla, Tushar J. Trivedi, **Naved I. Malek** and Arvind Kumar. RSC Advance, 5, 99245-99252, **2015**. DOI: 10.1039/c5ra22329f.
- 17) Molecular interactions study through experimental and theoretical volumetric, acoustic and refractive properties of binary liquid mixtures at several temperatures 1. N, N-dimethylaniline with Aryl, and Alkyl Ethers. Zubin master and **Naved I Malek**, Journal of Molecular Liquids, 196, 120-134, **2014**. DOI: 10.1016/j.molliq.2014.03.027.
- 18) Study on thermo physical and excess molar properties of binary systems of ionic liquids : [C_nMIM][PF₆] (n= 6, 8) and alkyl acetates, **Naved I Malek**, A.Singh, R.Surati, S.P. Ijardar, J. of Chemical Thermodynamics, 74, 103-118, **2014**. DOI: 10.1016/j.jct.2014.01.012.
- 19) Experimental and theoretical excess molar properties of imidazolium based ionic liquids with molecular organic solvents – I. 1-Hexyl-3-methylimidazolium tetrafluoroborate and 1-octyl-3-methylimidazolium tetrafluoroborate with cyclic ethers, Sushma P. Ijardar, Naved I. Malek, J. of Chemical Thermodynamics, 71, 236-248, **2014**. DOI: 10.1016/j.jct.2013.11.027.
- 20) Excess molar properties for binary systems of C_nMIM-BF₄ Ionic liquids with alkylamines in the temperature range (298.15-318.15) K. Experimental results and theoretical model calculations. **Naved I Malek**, S. P. Ijardar, and Shantilal B. Oswal. Journal of Chemical & Engineering Data, 59 (3), 540-553, **2014**. DOI: 10.1021/je301167q.
- 21) Estimation of speeds of sound in cyclohexane + benzene, + benzaldehyde, and + cyclohexylamine, and cyclohexylamine + benzene in the temperature range (293.15–323.15) K employing semi-empirical and theoretical equations. **Naved I Malek**, S. P. Ijardar, and Shantilal B. Oswal. Indian Journal of Chemistry, 52 A, 492-497, **2013**.
- 22) Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K. **Naved I Malek**, Sushma P. Ijardar, Zubin R Master and Shantilal B. Oswal. Thermochimica Acta 547, 106-119, **2012**. DOI: 10.1016/j.tca.2012.08.011.
- 23) Volumetric and Acoustic Properties of Binary Mixtures of Cyclohexane + Benzene and + Benzaldehyde at (293.15 to 323.15) K. **Naved I Malek**, Sushma P.

- Ijardar, and Shantilal B. Oswal. *ThermochimicaActa* 539, 71– 83, **2012**. DOI: 10.1016/j.tca.2012.04.002.
- 24) Studies on volumetric properties of triethylamine in organic solvents with varying polarity. S.P. Ijardar, **Naved I Malek** and S.L. Oswal. *Indian Journal of Chemistry-A*, 50-A (12)1709-1718, **2011**.
- 25) Thermodynamic and acoustic properties of binary mixtures of ethers. V. Diisopropyl ether or oxolane with 2- or 3-chloroanilines at 303.15, 313.15 and 323.15 K” V. Pandiyan, S.L. Oswal, **Naved IMalek**, P. Vasantharani, *ThermochimicaActa*, 524 (1-2) 140-150, **2011**. DOI: 10.1016/j.tca.2011.07.005.
- 26) Temperature-Dependent Solvatochromic Probe Behavior within Ionic Liquids and (Ionic Liquid + Water) Mixtures. S. Trivedi, **Naved IMalek**, K. Behera and S. Pandey. *The Journal of Physical Chemistry-B*, 114 (24) 8118–8125, **2010**. DOI: 10.1021/jp102217u.
- 27) Visual Evidence for Formation of Water-in-Ionic Liquid Microemulsions. K. Behera, **Naved I Malek** and S. Pandey. *ChemPhysChem*. 10, 3204 – 3208, **2009**. DOI: 10.1002/cphc.200900669.
- 28) Free Radical Copolymerization of Methyl Methacrylate and Styrene with N-(4-carboxyphenyl) maleimide. S.L.Oswal, V.K. Bhandari, P.Bhamore and **Naved I Malek**. *International Journal of Polymeric Materials*. 56, 421-435, **2007**. DOI: 10.1080/00914030600900015.
- 29) Radical Polymerization of N-(4-butoxycarbonylphenyl)maleimide and its Copolymerization with Methyl Methacrylate, Styrene and Acrylonitrile and the properties of the resulting Polymers. S.L.Oswal, N. N. Chapaneri and **Naved I Malek**. *Design Monomers and Polymers*. 10 (6) 487-506, **2007**. DOI: 10.1163/156855507782401141.
- 30) Synthesis and Radical Copolymerization of Ethyl Acrylate and Butyl Acrylate with N- [4-N'-(Phenylaminocarbonyl) phenyl]maleimide. S. L. Oswal, C. B. Patel, and **Naved I Malek**. *International Journal of Polymeric Materials*. 56, 27-41, **2007**. DOI: 10.1080/009140306007019.
- 31) Synthesis and Radical Polymerization of N-[4-N'-(Phenylaminocarbonyl)phenyl]maleimide and its Copolymerization with Methyl Methacrylate. C. B. Patel, **Naved I Malek** and S. L. Oswal, *J of Macromolecular Science. Pure & Applied Chemistry*. 43, 289-303, **2006**. DOI: 10.1080/10601320500437201.

- 32) Interfacial Polymerization of Linear Aromatic Poly(ester amide)s. S.L.Oswal, **Naved I Malek** and A.K.Pandya. International Journal of Polymeric Materials. 58 (4) 202–216, **2009**. DOI: 10.1080/00914030802639973.
- 33) Synthesis, Charecterization and Thermal Properties of Terpoly (MaleimideMethylmethacrylate-Acrylonitrile), T erpoly (Maleimide Methyl methacrylate- Vinylacetate) and Terpoly (MaleimideMethylmethacrylate- Butylacrylate). S.L.Oswal, N.S.Sarkar, A.M.Patel and **Naved I Malek**. Journal of Veer Narmad South Gujarat University, Vol. V, 105-115, **2006**.
- 34) Studies of viscosities of dilute solutions of alkylamine in non-electrolyte solvents. II. Haloalkanes and other polar solvents. S.L. Oswal, J.S. Desai, S.P. Ijardar, **Naved I Malek**. ThermochemicaActa, 427, 51–60, **2005**. DOI: 10.1016/j.tca.2004.08.013.

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