

Dr. NAVED ANJUM I MALEK

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Applied Chemistry Department

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RESEARCH INTEREST

- (i) Designing novel surfactants with Ionic Liquid Characteristics, their aggregation behavior in various external environments.
- (ii) Sol-gel in Ionic Liquids; Ionogels and their applications in materials.
- (iii) Chemical Thermodynamics and Solution Chemistry of pure and multi-component liquid mixtures including Ionic Liquids and Deep Eutectic Solvents.
- (iv) Carbohydrate Chemistry including Cellulose Chemistry.

EDUCATIONAL QUALIFICATIONS

- 2014-2015 Post-Doctoral Fellow, Universidade de Sao Paulo, Brazil.
 - 2004-2007 Ph.D. entitled: "Synthesis and characterization of Polyester-Amides" Veer Narmad South Gujarat University, Surat, Gujarat.
 - 2001-2003 M.Sc.: Department of Chemistry, V.N. South Gujarat University, Surat,
Major: Analytical Chemistry
 - 2001 CIC: I.G.N.O.University, India
 - 1998-2001 B.Sc. V.N. South Gujarat University, Surat, Gujarat, India
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RESEARCH PROJECTS

1. UGC-DAE-CSR Collaborative Research Project. (UDCSR/MUM/AO/CRS-M-276/2017/573. 2018.
2. Award of Beam Time by Australian Centre for Neutron Scattering (ANSTO) for the Proposal Entitled "Sterol induced nanoaggregates of ionic liquid based surfactants for the drug solubilisation". 2017.
3. 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
4. Council of Scientific and Industrial Research (CSIR), New Delhi (01(2545)/11/EMR- -II dated 12/12/2011).
5. Institute Research Grants by S.V.National Institute of Technology, Surat.

PROFESSIONAL AWARDS, FELLOWSHIPS RECEIVED

2010 DST Young Scientist Award (Under Fast Track Scheme)

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

ACHIEVEMENTS

2013 Best Presentation award by the Him Science Congress Association (HSCA) during March 2013.

2009 Summer Research Faculty Fellowship IIT-Delhi. New Delhi, India

2006 Best Presentation award by the Indian Thermodynamic Society during the Scientific Meeting in Oct-06.

2005 Gujarat State Research Scholarship for Research.

SCIENTIFIC SOCIETY MEMBERSHIP

1. Fellow member of the American Chemical Society.
2. Fellow member of the Indian Council of Chemists.
3. Fellow member of the Indian Thermodynamics Society.

STUDENTS GUIDED

PhD Dissertation

1. Zubin R Master, "Thermodynamics and Transport Properties of Binary Liquid Mixtures Including Ionic Liquids. **May-2015**."
2. Utkarsh U More, "Studies on the micellar Properties of Cationic Gemini Surfactants in the Presence of 1-Alkyl-3-Methylimidazolium Bromide Ionic Liquids in Aqueous Solution" **June- 2017**."
3. Zuber S Vaid, "Aggregation behavior of 1-Alkyl-3-Vinylimidazolium Bromide Ionic Liquids in Aqueous Solution and their Micellar Transition in the Presence of Different Additives" **September 2017**."
4. Sargam M Rajput "Modulating Interfacial and Micellar Properties of the Surfactants Through External Additives Leading to Various Nano-aggregates". Thesis Submitted- **June 2019**
5. Ankit Shah "Cell-Mimetic Surfactant Systems."
6. Muzammil Kuddushi, "Ionic Liquid Based Gels: A Step Towards Dyes, Drugs and Protein encapsulation."
7. Monika Jain, "Sol-Gel Transformations in Ionic Liquids"

MSc Dissertation

1. Pallavi Kumari, Interaction of Imidazolium Based Room Temperature Ionic Liquids with Gemini Surfactants. 2011-12.
2. Chirag B. Surti, Thermodynamics Properties of Binary Liquid Mixtures. 2011-12.
3. Archana Singh, Physical and Excess Properties for Binary Mixtures of 1-methyl-3-octylimidazolium hexafluorophosphate [Omim][PF₆], ionic liquids with molecular solvents. 2012-13.
4. Roshani Surati, Density, Speeds of Sound, and refractive index measurements for the binary systems 1-methyl-3-hexylimidazolium hexafluorophosphate [Hmim][PF₆], ionic liquids with organic solvents at T=293.15-323.15 K. 2012-13.
5. Nilesh Kanani, Modulating Properties of aqueous cationic gemini

- surfactants by the addition of hydrophilic ionic liquids. 2012-13.
6. Chirag Patel, Unique role of hydrophilic ionic liquids in modifying properties of aqueous cationic gemini surfactants. 2012-13.
 7. Manzil Patel, Investigation on some thermo-physical properties of PEG 600 with hydrophilic ionic liquids at different temperatures. 2013-14.
 8. Heta Patel, Investigation on some thermo-physical properties of PEG 400 with hydrophilic ionic liquids at different temperatures. 2013-14.
 9. Isha Bhargava, Sodium DodecylbenzeneSulphonate Induced Micellar Transition in Aqueous Cationic Gemini Surfactants, 2016-17.
 10. Kulsum Mondal, Diclofenac Sodium Induced Micellar Transition in Aqueous Cationic Gemini Surfactants, 2016-17.
 11. Gurupreet Sing, "Volumetric Properties of Aqueous Des Systems At Different Temperatures" 2017-18.
 12. Nehal Patel, "Ionic Liquids as a Low Molecular weight Gelators" 2017-18.
 13. Mamta Patel "Construction of Inclusion Complexion in the Ester Funtionalized Ionic Liquid based Surfactatns with b-cylcodextrin" 2017-18.
 14. Nahajaveen Imam, Sodium Benzoate Induced Structural Transition of Ester Functionalized Ionic Liquids" 2018-19
 15. Aman Kumar Sharma, Gemini Surfactant Based Thermo- Responsive Gel to Gel Transition, 2018-19.
 16. Heni S Panchal, pH-responsive Self Assemblies Based on Fatty Acid and Gemini Surfactant Mixture, 2018-19.
 17. Pratyush, Synergistic Interaction Between Cholesterol and Ester Functionalized Ionic Liquid Based Surfactant Leading to the Morphological Transition, 2018-19.
 18. Ayushi R. Marfatia, Sodium Butyrate Induced Structural Transition of Ester Functionalized Ionic Liquids, 2018-19.
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PUBLICATIONS (55)

Book Chapters	-	04
Research Papers Published-		51
Total Citations Received-		580
h-index-		15
i-index-		23

Book Chapters

- [1] Utkarsh U. More, Omar A. El Seoud, and **Naved I. Malek**, Dual Role Played by Ionic Liquids to Modulate the Interfacial and Micellar Properties of the Single Chain Cationic Surfactants in Aqueous Solution, Monograph Series, Physical Chemistry for Engineering and Applied Sciences, Apple Academic Press, CRC Press, Taylor and Francis, **ISBN: 9781771886321**
- [2] Sushma P. Ijardar, Arvind Kumar, DebashisKundu, Tamal Banerjee, and **Naved I. Malek**, “Application of thermodynamic model for prediction of experimental solubility of alkali metal halides in aqueous organic solvent” Innovations in Physical Chemistry: Monograph Series, Physical Chemistry for Engineering and Applied Sciences, Apple Academic Press, CRC Press, Taylor and Francis, **ISBN: 9781771886321**
- [3] Zubin R. Master, Zuber S. Vaid, and **Naved I. Malek**, Interaction of Tertiary Amine with Aryl and Alkylethers: Experimental and Theoretical Approach, Innovations in Physical Chemistry: Monograph Series, Physical Chemistry for Engineering and Applied Sciences, Apple Academic Press, CRC Press, Taylor and Francis, **ISBN: 9781771886321**.
- [4] Muzammil Kuddushi, Monika Jain, **Naved I Malek**, Industrial Application Of Ionic Liquids In Paint Industry, “Industrial Applications of Green Solvents” Published by Materials Research Forum LLC. The USA.

Research Papers

- [5] Muzammil Kuddushi, Sargam Rajput, Ankit Shah, Jitendra Mata, Arvind Kumar, Vinod K Aswal, Omar El Seoud, **Naved I. Malek**, Stimuli Responsive, Self-Sustainable and Self-Healable Functionalized Hydrogel with Dual Gelation, Load-Bearing and Dye Adsorbing Properties, *ACS Applied Materials & Interfaces*, 11 (21) 19572-19583, 2019.
DOI:10.1021/acsami.9b01129.
- [6] Subhadeep Ghosh, Jigna R. Bhamore, **Naved I. Malek**, Z.V.P. Murthy, Suresh Kumar Kailasa, Trypsin mediated one-pot reaction for the synthesis of red fluorescent gold nanoclusters: Sensing of multiple analytes (carbidopa, dopamine, Cu^{2+} , Co^{2+} and Hg^{2+} ions), *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, (2019) 215, 209-217.
DOI: 10.1016/j.saa.2019.02.078.
- [7] Muzammil Kuddushi, Gurpreet Singh Nangala, Sargam Rajput, Sushma P. Ijardar, **Naved I. Malek**, Understanding the Peculiar Effect of Water on the Physicochemical Properties of Choline Chloride Based Deep Eutectic Solvents Theoretically and Experimentally, *Journal of Molecular Liquids* 278 (2019) 607–615. DOI: 10.1016/j.molliq.2019.01.053
- [8] Shilpa K Nandwani, **Naved I Malek**, Mousumi Chakraborty, Smita Gupta, Potential of a novel surfactant slug in recovering additional oil from highly saline calcite cores during EOR process – Synergistic blend of surface active ionic liquid and nonionic surfactant, *Energy Fuels* 2019, 33, 1, 541-550.
DOI: 10.1021/acs.energyfuels.8b03419
- [9] Ankit Shah, Muzammil Kuddushi, Sargam Rajput, Omar A. El Seoud, **Naved I. Malek**, Ionic Liquids Based Catanionic Coacervates: The Novel Microreactors for Membrane Free Sequestration of Dyes and Curcumin. *ACS Omega*, 2018, 3 (12), 17751–17761.
DOI: 10.1021/acsomega.8b02455.

- [10] Kuddushi, M.; Patel, N. K.; Rajput, S. M.; Shah, A.; El Seoud, O.A.; **Naved Malek**.; Thermo-Switchable de Novo Ionic Liquid-Based Gelators with Dye-Absorbing and Drug-Encapsulating Characteristics. *ACS Omega*, 2018, 3, 9, 12068-12078.
DOI: 10.1021/acsomega.8b01984
- [11] Sargam M Rajput, Krishnakant Gangele, Sugam Kumar, Vinod K Aswal, Jitendra P Mata, **Naved I Malek**, Suresh Kumar Kailasa, Krishna Mohan Poluri, Nano-Vehicles for Drug Delivery Using Low-Cost Cationic Surfactants: A Drug Induced Structural Transitions, *ChemistrySelect*, 2018, 3, 9454-9463.
DOI: 10.1002/slct.201801111
- [12] Amanda C. Pinheiro, André B. Gonçalves, Wilhelm J. Baader, Lydia F. Yamaguchi, **Naved I. Malek**, Erick L. Bastos, and Omar A. El Seouda, Biofuels from coconut fat and soybean oil: microwave-assisted synthesis and gas chromatography/mass spectrometry analysis, *Quimica Nova*, Accepted, 2018.
DOI: 10.21577/0100-4042.20170273
- [13] Thais A. Bioni, **Naved I. Malek**, Omar A. El Seoud, Kinetics of cellulose acylation with carboxylic anhydrides and N-acylimidazoles in ionic liquid/molecular solvent mixtures: Relevance to the synthesis of mixed cellulose esters, *LENZINGER BERICHTTE*, 2018, 94, 57 – 66.
- [14] Zuber S. Vaid, Sargam M. Rajput, Ankit Shah, Yogesh Kadam, Arvind Kumar, Omar A. El Seoud, Jitendra P. Mata, **Naved I. Malek**, Salt-Induced Microstructural Transitions in Aqueous Dispersions of Ionic-Liquids Based Surfactants, *ChemistrySelect*, 2018, 17, 4851-4858.
DOI:10.1002/slct.201800041.
- [15] Sargam M. Rajput, Sugam Kumar, Vinod K Aswal, Omar A. El Seoud, **Naved I. Malek**, Suresh Kumar Kailasa, Drug-induced micelle-to-vesicle transition of a cationic gemini surfactant: Potential applications in Drug Delivery. *ChemPhysChem*, 2018, 19 (7), 865-872.
DOI: 10.1002/cphc.201701134

- [16] Zuber S. Vaid, Sargam M. Rajput, MuzammilKuddushi, Arvind Kumar, Omar A. El Seoud and **Naved I. Malek**, Synergistic Interaction between Cholesterol and Functionalized Ionic Liquid Based Surfactant Leading to the Morphological Transition. *ChemistrySelect* 2018, 3, 1300– 1308.
DOI: 10.1002/slct.201702561.
- [17] N. Mishra, Y. Kadam, **Naved I. Malek**, Overview of enzyme based biosensors and their applications, 1, 2018, 12 (1), 108-117. AU-ISSN 0024-0907, Published by Lenzing AG, 4860 Lenzing, Austria.
- [18] Utkarsh U More, Zuber S Vaid, SargamM Rajput, **Naved I Malek**, Omar A El Seoud, Effects of 1-alkyl-3-methylimidazolium bromide ionic liquids on the micellar properties of [butanediyl-1,4-bis(dimethyldodecylammonium bromide)] gemini surfactant in aqueous solution, *Colloid and Polymer Science*, 295, 2351-2361, **2017**.
DOI: 10.1007/s00396-017-4210-x)
- [19] Shilpa K Nandwani, **Naved I Malek**, VN Lad, Mousumi Chakraborty, Smita Gupta, Study on interfacial properties of Imidazolium ionic liquids as surfactant and their application in enhanced oil recovery, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 516, 383-393, **2017**.
DOI: 10.1016/j.colsurfa.2016.12.037.
- [20] Utkarsh More, ZuberS. Vaid, Sargam Rajput, Y Kadam, **Naved Malek**, Effect of imidazolium-based ionic liquids on the aggregation behavior of twin-tailed cationic gemini surfactant in aqueous solution, *Journal of Dispersion Science and Technology*, 38 (3), 393-402, **2017**.
DOI: 10.1080/01932691.2016.1170610
- [21] Zuber S Vaid, Arvind Kumar, Omar A El Seoud, **Naved I Malek**, Drug induced micelle-to-vesicle transition in aqueous solutions of cationic surfactants, *RSC Advances*, 7, 3861-3869, 2017.
DOI: 10.1039/C6RA25577A
- [22] Sargam M Rajput, Utkarsh U More, Zuber S Vaid, Kamlesh D Prajapati, **Naved I Malek**, Impact of organic solvents on the

micellization and interfacial behavior of ionic liquid based surfactants, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 507, 182-189, **2016**.

DOI:10.1016/j.colsurfa.2016.08.008.

- [23] Heta Patel, Zuber S. Vaid, Utkarsh U. More, Sushma P. Ijardar, **Naved I. Malek**, Thermophysical, acoustic and optical properties of binary mixtures of imidazolium based ionic liquids + polyethylene glycol, *Journal of Chemical Thermodynamics*, 99, 40-53, **2016**.

DOI: 10.1016/j.jct.2016.02.025

- [24] Zuber S Vaid, Utkarsh U More, Shantilal B Oswal, **Naved I Malek**, Experimental and theoretical excess molar properties of imidazolium based ionic liquids with isomers of butanol, *Thermochimica Acta*, 634, 38-47, **2016**.

DOI: 10.1016/j.tca.2016.03.026.

- [25] Anuji K. Vasu, Jagadish Katla, **Naved I. Malek**, Sriram Kanvah, Influence of imidazolium ionic liquids on fluorescence of push-pull diphenylbutadienes, *Journal of Photochemistry and Photobiology A: Chemistry*, 321 (1) 55-62, **2016**.

DOI:10.1016/j.jphotochem.2016.01.015.

- [26] Zubin R. Master, Zuber S. Vaid, Utkarsh U. More, **Naved I Malek**, Molecular interaction study through experimental and theoretical volumetric, transport and refractive properties of N-ethyl aniline with aryl and alkyl ethers at several temperatures. *Physics and Chemistry of Liquids*, 54 (2) 223-244, **2016**.

DOI: 10.1080/00319104.2015.1074047.

- [27] **Naved I. Malek**, Sushma P. Ijardar, Binary mixtures of ([C₄mim][NTf₂] + molecular organic solvents): Thermophysical, acoustic and transport properties at various compositions and temperatures. *Journal of Chemical Thermodynamics*, 93, 75-85, **2016**.

DOI: <http://doi.org/10.1016/j.jct.2015.09.022>

- [28] Pankaj Bharmoria, Tushar J Trivedi, **Naved I Malek**, Arvind Kumar, Tuning the physicochemical properties of protic-aprotic ionic liquids

upon reciprocal binary mixing, *Indian Journal of Chemistry-A*, **55**, 544-553, **2016**.

DOI: <http://nopr.niscair.res.in/handle/123456789/34190>.

- [29] U. More, P. Kumari, Z. Vaid, and K. Behera, **Naved I Malek**, Interaction between Ionic Liquids and Gemini Surfactant: A Detailed Investigation into the Role of Ionic Liquids in Modifying Properties of Aqueous Gemini Surfactant, *Journal of Surfactants and Detergents*, **19** (1) 75-89, **2016**.

DOI:10.1007/s11743-015-1747-x.

- [30] Paulo A.R. Pires, **Naved I. Malek**, Thaís C. Teixeira, Thaís A. Bioni, Haq Nawaz, Omar A. El Seoud, Imidazole-catalyzed esterification of cellulose in ionic liquid/molecular solvents: A multi-technique approach to probe effects of the medium. *Industrial Crops and Products* **77**, 180–189, **2015**.

DOI:10.1007/s11743-015-1747-x

- [31] Haq Nawaz, Paulo A. R. Pires, Elizabeth P. G. Arêas, **Naved I. Malek** and Omar A. El Seoud, Probing Cellulose Acetylation in Binary Mixtures of an Ionic Liquid with Dimethylsulfoxide and Sulfolane by Chemical Kinetics, Viscometry, Spectroscopy, and Molecular Dynamics Simulations. *Macromolecular Chemical Physics*, **216** (24) 2368-2376, **2015**.

DOI: 10.1002/macp.201500315.

- [32] **Naved I. Malek**, Zuber S. Vaid, Utkarsh U. More, Omar A. El Seoud, Ionic-liquid-based surfactants with unsaturated head group: synthesis and micellar properties of 1-(n-alkyl)-3-vinylimidazolium bromides. *Colloid Polymer Science* **293**, 3213–3224, **2015**.

DOI: doi:10.1007/s00396-015-3746-x.

- [33] Rakhi N. Mehta, Utkarsh More, **Naved I Malek**, Mousumi Chakraborty, Parimal A. Parikh, Study of stability and thermodynamic properties of water-in-diesel nanoemulsion fuels with nano-Al additive. *Applied Nanoscience* **5**(8)891–900, **2015**.

DOI: 10.1007/s13204-014-0385-3.

- [34] Zuber Vaid, Utkarsh More, Sushma P. Ijardar, **Naved I. Malek**, Investigation on thermos-physical and excess properties of binary mixtures of imidazolium based ionic liquids at temperatures (293.15 to 323.15) K: III [C_nmim][PF₆] (n = 4, 6, 8) + THF. *Journal of Chemical Thermodynamics*, 86, 143-153, **2015**.
DOI: 10.1016/j.jct.2015.02.011.
- [35] Z. Vaid, U. More, R. Gardas, **Naved I Malek** and S.P. Ijardar, Composition and temperature dependence excess properties of binary mixtures of imidazolium based ionic liquids: II [C_nmim][PF₆] + propylamine, *Journal of Solution Chemistry*, 44, 718-741, **2015**.
DOI: 10.1007/s10953-015-0325-1.
- [36] U. More, Z. Vaid, P. Bhamoria, A. Kumar **Naved I Malek**, Effect of [C_nmim][Br] Based Ionic Liquids on the Aggregation Behavior of Tetradecyltrimethylammonium bromide in Aqueous Medium, *Journal of Solution Chemistry*, 44, 850-874, **2015**.
DOI: 10.1007/s10953-015-0318-0.
- [37] Pankaj Bharmoria, Krishnaiah Damarla, Tushar J. Trivedi, **Naved I. Malek** and Arvind Kumar, A reciprocal binary mixture of protic/aprotic ionic liquids as a deep eutectic solvent: physicochemical behaviour and application towards agarose processing. *RSC Advance*, 5, 99245-99252, **2015**.
DOI: 10.1039/c5ra22329f.
- [38] Zubin master and **Naved I Malek**, 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. *Journal of Molecular Liquids*, 196, 120-134, **2014**.
DOI: 10.1016/j.molliq.2014.03.027.
- [39] **Naved I Malek**, A. Singh, R. Surati, S.P. Ijardar, Study on thermo physical and excess molar properties of binary systems of ionic liquids : [C_nMIM][PF₆] (n= 6, 8) and alkyl acetates, *Journal of Chemical Thermodynamics*, 74, 103-118, **2014**.

DOI: 10.1016/j.jct.2014.01.012.

- [40] Sushma P. Ijardar, **Naved I. Malek**, 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, *Journal of Chemical Thermodynamics*, 71, 236-248, **2014**.

DOI: 10.1016/j.jct.2013.11.027.

- [41] **Naved I Malek**, S. P. Ijardar, and Shantilal B. Oswal, Excess molar properties for binary systems of CnMIM-BF₄ Ionic liquids with alkylamines in the temperature range (298.15-318.15) K. Experimental results and theoretical model calculations. *Journal of Chemical & Engineering Data*, 59 (3), 540-553, **2014**.

DOI: 10.1021/je301167q.

- [42] **Naved I Malek**, S. P. Ijardar, and Shantilal B. Oswal, 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. *Indian Journal of Chemistry-A*, 52 A, 492-497, **2013**.

<http://nopr.niscair.res.in/handle/123456789/16917>

- [43] **Naved I Malek**, Sushma P. Ijardar, Zubin R Master and Shantilal B. Oswal, Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K. *Thermochimica Acta* 547, 106-119, **2012**.

DOI: 10.1016/j.tca.2012.08.011.

- [44] **Naved I Malek**, Sushma P. Ijardar, and Shantilal B. Oswal, Volumetric and Acoustic Properties of Binary Mixtures of Cyclohexane + Benzene and + Benzaldehyde at (293.15 to 323.15) K. *Thermochimica Acta* 539, 71– 83, **2012**.

DOI: 10.1016/j.tca.2012.04.002.

- [45] V. Pandiyan, S.L. Oswal, **Naved I Malek**, P. Vasantharani, 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" *ThermochimicaActa*, 524 (1-2) 140-150, **2011**.
DOI: 10.1016/j.tca.2011.07.005.
- [46] S.P. Ijardar, **Naved I Malek** and S.L. Oswal, Studies on volumetric properties of triethylamine in organic solvents with varying polarity, *Indian Journal of Chemistry-A*, 50-A (12)1709-1718, **2011**.
- [47] S. Trivedi, **Naved I Malek**, K. Behera and S. Pandey, Temperature-Dependent Solvatochromic Probe Behavior within Ionic Liquids and (Ionic Liquid + Water) Mixtures.*The Journal of Physical Chemistry-B*,114 (24) 8118–8125, **2010**.
DOI: 10.1021/jp102217u.
- [48] Behera, **Naved I Malek** and S. Pandey, Visual Evidence for Formation of Water-in-Ionic Liquid Microemulsions. *K. ChemPhysChem*,10,3204–3208, **2009**.
DOI:10.1002/cphc.200900669.
- [49] Shantilal B Oswal, **Naved I Malek**, Ashesh K Pandya Interfacial Polymerization of Linear Aromatic Poly (ester amide)s, *International Journal of Polymeric Materials*, 58, 202-216, **2009**.
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- [50] S.L. Oswal, V.K. Bhandari, P.Bhamore and **Naved I Malek**, Free Radical Copolymerization of Methyl Methacrylate and Styrene with N-(4- carboxyphenyl) maleimide. *International Journal of Polymeric Materials*. 56, 421-435, **2007**.
DOI: 10.1080/00914030600900015.
- [51] S.L. Oswal, N. N. Chapaneri and **Naved I Malek**, Radical Polymerization of N-(4-butoxycarbonylphenyl)maleimide and its Copolymerization with Methyl Methacrylate, Styrene and Acrylonitrile and the properties of the resulting Polymers. *Design Monomers and Polymers*.10 (6) 487-506, **2007**.
DOI: 10.1163/156855507782401141.
- [52] S. L. Oswal, C. B. Patel, and **Naved I Malek**, Synthesis and Radical Copolymerization of Ethyl Acrylate and Butyl Acrylate with N- [4-N'-

(Phenylaminocarbonyl) phenyl]maleimide. *International Journal of Polymeric Materials*. 56, 27-41, **2007**.

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- [53] C. B. Patel, **Naved I Malek** and S. L. Oswal, Synthesis and Radical Polymerization of N-[4-N'-(Phenylamino- carbonyl)phenyl] maleimide and its Copolymerization with Methyl Methacrylate. *Journal of Macromolecular Science. Pure & Applied Chemistry*. 43, 289-303, **2006**. DOI: 10.1080/10601320500437201.
- [54] S.L. Oswal, N.S. Sarkar, A.M. Patel and **Naved I Malek**, Synthesis, Characterization and Thermal Properties of Terpoly (MaleimideMethylmethacrylate-Acrylonitrile), T erpoly (Maleimide Methyl methacrylate- Vinylacetate) and Terpoly (MaleimideMethylmethacrylate-Butylacrylate), *Journal of Veer Narmad South Gujarat University*, Vol. V, 105-115, **2006**.
- [55] S.L. Oswal, J.S. Desai, S.P. Ijardar, **Naved I Malek**, Studies of viscosities of dilute solutions of alkylamine in non-electrolyte solvents. II. Haloalkanes and other polar solvents. *Thermochimica Acta*, 427, 51–60, **2005**. DOI: 10.1016/j.tca.2004.08.013.

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