

CURRICULUM-VITAE



Ketan C. Kuperkar

Current Position Assistant Professor.
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Qualifying Degree Ph.D. (Physical Chemistry).

A. Research field(s) of Interest: Surfactant Science, Polymer Chemistry, Metal Corrosion, Waste water treatment, Materials Science, Soft Condensed Matter, and Computational Chemistry.

B. Fellowships/Awards:

1. Postdoctoral Research Fellowship awarded by High Energy Accelerator Research Organization (KEK), J-PARC, JAPAN under the project entitled “**Hierarchical structure of soft matter induced by addition of charges**” of Dr. Hideki Seto. (01/05/2012 to 30/06/2013).
2. Research Associateship awarded by Board of Research in Nuclear Sciences (BRNS), BARC - Mumbai under the scheme 2010/37C/31/BRNS and project entitled “**Oil Solubilization in Block Copolymeric Micelles**” of Dr. P. Bahadur. (05/03/2011 to 21/04/2012).
3. Ph.D. (Physical Chemistry) awarded on the title “**Molecular interactions of Surfactant in aqueous solutions**” under the supervision of Professor P. Bahadur, Department of Chemistry, Veer Narmad South Gujarat University, Surat in July 2010.
4. Direct Senior Research Fellowship awarded by Council for Scientific and Industrial Research (CSIR), Govt. of India, New Delhi under the scheme 09/1008/ (0001)/2010/EMR-I and project entitled “**Salt induced micellar transitions in aqueous solution of Cationic Surfactants**” (01/04/2010 to 22/7/2010).
5. Senior Research Fellowship awarded by Council for Scientific and Industrial Research (CSIR), Govt. of India, New Delhi under the scheme 01(2068)/06/EMR-II and project entitled “**Interaction of Surfactants in Mixed Micelle: Effect of various Additives, Chain Length, pH and Micelle Charge Density**” of Dr. P. Bahadur. (06/05/2008 to 31/12/2009).

C. Project Details:

1. Aggregation of amphiphilic copolymers in deep eutectic solvent-water mixed systems (CRS-M-234) sponsored by Collaborative Research Scheme of University Grants Commission-Department of Atomic Energy, INDIA. Ref. UDCSR/MUM/CRS-M-234/2017/1002.

D. List of Publications:

1. Crystallization study and morphology behavior of calcium carbonate crystals in aqueous Surfactant-Pluronics[®] prototype, B. Kanoje, K. Kuperkar, J. Mat. Res. Tech. (2017) (*Accepted*).
2. Novel alternative for petroleum based synthesized polyurethane from tung oil: A systematic spectral, microscopy and thermal study. A. Shirke, B. Dholakiya, K. Kuperkar, Polymer Bulletin (2017) (*Accepted*).
3. Kinetics and thermodynamics of hazardous dye sorption from waste water using anionic surfactant as counter ion physically impregnated in polyurethane foam. A. Shirke, P. Parekh, B. Dholakiya, K. Kuperkar. J. Surfactants and Detergents (2017) (*Accepted*).
4. Morphology modification in freshly precipitated Calcium Carbonate particles using polymer-surfactant template, B. Kanoje, D. Patel, K. Kuperkar, Materials Letters 187 (2017) 44-48.
5. Mixed micellization study of alkyltrimethylammonium and alkyltriphenylphosphonium bromides in aqueous solution, S. Padasala, B. Kanoje, K. Kuperkar, P. Bahadur. J. Surfact. Deterg. 19(2) (2016) 389-398.
6. Solubilization study of water-insoluble dye in cationic single/dimeric surfactant micelles: Effect of headgroup, nonpolar tail, spacer chain in aqueous and salt solution, S. Padasala, K. Kuperkar, P. Bahadur, Coloration Technology 132(3) (2016) 217-221.
7. Tung Oil based polyurethanes: A short review, A. Shirke, P. Bhikhadiya, B. Dholakiya, K. Kuperkar, J. Polymer and Composites 3(3) (2015) 1-6.
8. Novel applications of Castor oil based Polyurethanes: A short review, A. Shirke, B. Dholakiya, K. Kuperkar, Polymer Science 57(4) (2015) 292-297.
9. PEO-PPO based star-block copolymer T904 as pH responsive nanocarriers for quercetin: Solubilization and release study, A. Parmar, A. Bahadur, K. Kuperkar, P. Bahadur European Polymer Journal 49(1) (2013) 12-21.
10. Phenol solubilization in the Aqueous Pluronic[®] Solutions: Investigating the Micellar Growth and Interaction as a Function of Pluronic[®] Composition, R. Ganguly, K. Kuperkar, P. Parekh, V.K. Aswal and P. Bahadur. J. Colloid Interface Sci. 378 (2012) 118-124.
11. Spectral and Scattering Microstructural Investigation in Cationic Gemini Surfactants (12-s-12) induced by p-toluidine. N. Dharaiya, A. Patriati, K. Kuperkar, E. G. R. Putra, P. Bahadur. Colloids Surfaces A 396 (2012) 1-7.
12. Microstructural Study of CTAB/1-Butanol/Salt/Water System: SANS and 2D-NOESY Analysis. K. Kuperkar, A. Patriati, E. G. R. Putra, D.G. Marangoni, P. Bahadur. Can. J. Chem. 90(3) (2012) 314-320.
13. Surface-Active Properties and Antimicrobial Study of Conventional Cationic and Synthesized Symmetrical Gemini Surfactants. K. Kuperkar, J. Modi, K. Patel. J. Surfact. Deterg. 15(1) (2012) 107-115.
14. Formation and growth of Gemini surfactant (12-s-12) micelles as modulate by spacers: A thermodynamic and small-angle neutron scattering (SANS) study. S. Chavda, K. Kuperkar, P. Bahadur. J. Chem. Engg. Data. 56 (5) (2011) 2647-2654.

15. Effect of n-alkanols/salt on the Cationic Surfactant Micellar System in their Aqueous Solutions – A Dynamic Light Scattering Study. K. Kuperkar, J. Mata, P. Bahadur. *Colloids Surfaces A*. 380 (2011) 60-65.
16. Formation and Growth of Micelles in Dilute Aqueous CTAB Solutions in the presence of NaNO₃ and NaClO₃. K. Kuperkar, L. Abezgauz, K. Prasad, P. Bahadur. *J. Surfact. Deterg.* 13(3) (2010) 293-303.
17. Effect of Counterions on Micellization and Micellar Growth in Aqueous Cetyl pyridinium chloride solutions. L. Abezgauz, K. Kuperkar, P. A. Hassan, O. Ramon, P. Bahadur, D. Danino. *J. Colloid Interface Sci.* 342 (2010) 83-92.
18. Structural Investigation of Viscoelastic Micellar Water/CTAB/NaNO₃ Solution. K. Kuperkar, L. Abezgauz, D. Danino, G. Verma, P. A. Hassan, V. K. Aswal, D. Varade, P. Bahadur. *Pramana - J. Phys.* 71(5) (2008) 1-8.
19. Viscoelastic Micellar Water/CTAB/NaNO₃ Solutions: Rheology, SANS and CryoTEM Analysis. K. Kuperkar, L. Abezgauz, D. Danino, G. Verma, P. A. Hassan, V. K. Aswal, D. Varade, P. Bahadur. *J. Colloid Interface Sci.* 323 (2008) 403-409.
20. Micellization and Interaction Properties of Aqueous Solutions of Mixed Cationic & Nonionic Surfactants. T. Joshi, B. Bharatiya, K. Kuperkar. *J. Disp. Sci. Tech.* 29(2008) 3-9.

E. Books / Book Chapter / Reviews written:

1. Gemini Surfactant as Metal Corrosion Inhibitors - A Review, **K. Kuperkar**, (*Published in Household Products and Cleaning – Today, UK, 2011*).
2. A Classical Mathematical solution for surfactant induced flow behavior through porous media, R. Kuperkar, **K. Kuperkar**, (*Published in Household Products and Cleaning – Today, UK, 2013*).

F. Memberships:

1. Member of Asian Society for Colloid and Surface Science (ASCASS).
2. Life Member of Society for Industrial Chemistry (SIC), Mumbai, INDIA.
3. Life Member of Indian Society for Surfactant Science and Technology (ISSST), Kolkata, INDIA.

G. Invited / Expert Talk / Oral / Poster presentation at National/International Conferences:

1. Invited talk at 2nd International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2017) during August 2-5, 2017 in Phuket, Thailand.
2. Invited talk at 2016 Global Research Efforts on Energy and Nanomaterials (GREEN 2016) presented by Asia Pacific Society for Materials Research (APSMR) during December 22-25, 2016, Taiwan.
3. A Short Term Training Programme on “Particle Technology: Characterization and Modeling of Particulate Materials (PT-CMPT-2016)” at Chemical Engineering Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 1st – 5th August 2016.
4. A Short Term Training Programme on “Sophisticated Analytical Techniques in Surface Chemistry (SATSC-2016)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 19th – 23rd September 2016.

5. A Short Term Training Programme on “Recent Trends in Applied Chemical science and Technology (RTACST-2016)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 17th – 21st October 2016.

H. Conference / Training / Symposium / School / Workshop attended:

1. A Short Term Training Programme on “Particle Technology: Characterization and Modeling of Particulate Materials (PT-CMPT-2016)” at Chemical Engineering Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 1st – 5th August 2016.
2. A Short Term Training Programme on “Sophisticated Analytical Techniques in Surface Chemistry (SATSC-2016)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 19th – 23rd September 2016.
3. A Short Term Training Programme on “Recent Trends in Applied Chemical science and Technology (RTACST-2016)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 17th – 21nd October 2016.
4. 2 day Course and Workshop on “Materials Design using Computational Tools (MDCT-2016)” organized by Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 12th – 13th December 2016.

I. Conference/Training Program/Symposium/School/Workshop organized:

1. Organized a Short Term Training Programme on “Advanced Analytical Techniques for Materials Characterization (AATMC-2015)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 23rd–28th February 2015.
2. Organized a Short Term Training Programme on “Sophisticated Analytical Techniques in Surface Chemistry (SATSC-2016)” at Applied Chemistry Department, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat-395007, GUJARAT (INDIA). 19th–23rd September 2016.

J. Research students (Ph.D.)

No.	Year	Student Name	Title	Place
1	July 2017	Anilkumar Jangir (D17CY003)	Course work	ACD, SVNIT, Surat.
2	Dec. 2013	Amit G. Shirke (DS13CY001)	Vegetable oil based polymer synthesis with detailed characterization and their Applications. (Ongoing)	ACD, SVNIT, Surat.
3	Dec. 2013	Bharatkumar B. Kanoje (DS13CY003)	Micellization behaviour of Conventional and Dimeric Surfactant in aqueous solution system: Detailed characterization and their Applications (Ongoing)	ACD, SVNIT, Surat.

K. Research students (M.Sc. Dissertation)

No.	Year	Student Name	Title	Place
1	May 2017	Bhavin Bhagat (I12CY020)	Vesicle/rod-like micellar transition in cationic dimeric surfactants in presence of ethanol	ACD, SVNIT, Surat.
2	May 2017	Dhruvi Patel (I12CY033)	Drugs as "Green" pivotal inhibitor tool against metal corrosion	ACD, SVNIT, Surat.
3	May 2016	Sanya Shafi Zaman (I11CY009)	Study on Degradation of MDEA (Methyl diethanolamine) used in Gas Sweetening Unit and its effect on Sweetening Process at ONGC Hazira Plant	Dr. J. K. Srivastava, GM, ONGC-Surat & ACD, SVNIT, Surat.
4	May 2016	Dipeshkumar Barvaliya (I11CY013)	Soya fatty acid based water reducible alkyd polyester resin used in liquid printing ink	Dr. Kalpesh I. Patel, SCT Dept., Institute of Sci. & Tech. for Adv. Studies and Research, Vallabh Vidyanagar.
5	May 2015	Payal Baheti (I10CY011)	Glycerol for the synthesis of the biopolymers: Study the effect of catalyst on it	Prof. Kan-Sen Chou, Dept. of Chemical Engineering, National Tsing Hua University, (NTHU), Taiwan.
6	May 2015	Dhvani Patel (I10CY016)	Morphology modification of Calcium Carbonate particles using Polymer-Surfactant Template	ACD, SVNIT, Surat.
7	May 2015	Prafull Bhikadiya (I10CY020)	Synthesis of Polyol from Tung oil	ACD, SVNIT, Surat.