

# Jitendra Prakash MATA

## PERSONAL

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 Canberra, ACT-0200, Australia Fax: +61-2-61250750  
*Nationality:* Indian Mobile: +61-430193021  
*Date of Birth:* 2 November 1979 (Married)

## CAREER

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### SEP 2006- PRESENT: Postdoctoral Fellow with Prof. J. W. White

Research School of Chemistry, The Australian National University, Canberra, Australia

#### *Research interests:*

- High internal phase emulsions (industrial collaboration with Orica Australia)
- The structure of milk micelles-protein at interface (collaboration with DIGA Australia)
- Self assembling structures at the air-oil-water interface
- Block copolymer aggregation in aqueous media

Responsibilities also include oversight of research students, applying for beam time, overseas Neutron/X-ray scattering experiments, instrument development and supervision of X-ray reflectivity/scattering instruments at the RSC, ANU. Associate with the instrument advisory team of new neutron reflectometer, USANS and SANS instrument at the OPAL reactor, ANSTO.

### MAY 2006-SEP 2006: Research Associate with Prof. P. Bahadur

Department of Chemistry, V. N. S. G. University, Surat, India  
 Collaboration with S. C. Johnson Co. USA

Involved in developing universal cleaning surfactant formulation, solid-liquid interfacial studies for different surfaces, oversight of contact angle measuring instrument and its development.

### MAR 2006-SEP 2006: Visiting Lecturer in Engineering Chemistry

Reliance Industries Ltd. with S. V. National Institute of Technology, Surat, India

### JUL 2005-MAY 2006: Teaching Assistant in Engineering Chemistry

S. V. National Institute of Technology, Surat, India

Responsible for college based teaching of first year engineering students in engineering chemistry. This involved preparation of lectures, exams and problem sets.

### AUG 2002-APR 2005: Project Fellow with Prof. P. Bahadur

Department of Chemistry, V. N. S. G. University, Surat, India  
 University Grant Commission of India sponsored project

Interfacial and Micellar Characteristic of Di and Tri Block Copolymer and Their Mixtures in Solution

#### *Research interests:*

- EO-PO based block copolymers, aggregation in aqueous solution and their applications
- Effect on the structural behavior of copolymers in the presence of additives
- Correlation of classical techniques with advanced techniques like neutron scattering

## EDUCATION

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**2002-2005** **Ph.D:** Department of Chemistry, V. N. S. G. University, India  
*Thesis:* "Investigation on Polymeric Surfactant & Mixed Surfactant Solutions By Different Techniques" under Prof. P. Bahadur

**2000-2002** **M.Sc:** Department of Chemistry, V. N. S. G. University, India  
 Major: Analytical Chemistry

**1997-2000** **B.Sc:** P. T. Science College, V. N. S. G. University, India  
 Major: Chemistry

**2000** **CIC:** I.G.N.O. University, India  
 Major: Computing

**1998** **Hindi Vinit (Bachelor of Arts-Hindi):** Gujarat Vidyapith, India

**1995** **Programming in Basic:** I.I.C.S, India

## ACHIEVEMENTS

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- 2007 ANU Travel Grant:** for attending the Japan-Australia Symposium in Japan
- 2006 Postdoctoral Fellowship:** Australian National University, Australia
- 2005 Dr. Santi Nath Ghosh Memorial (Young Scientist) Award** for best paper presentation in the National conference on Polymer Materials by PSMPAF & ATIRA on 10<sup>th</sup>-11<sup>th</sup> December 2005
- 2003 Two Gold Medals and Two Prizes** for the highest marks in M.Sc. Chemistry by THE PRESIDENT OF INDIA, Dr. A. P. J. Abdul Kalam
- 2002 Dr. C. M. Desai award** for the highest marks in Chemistry in M.Sc-I
- 2001 Prize in Mono Acting competition** in University youth festival, Surat, India
- 2000 'B' & 'C' Certificates of N.C.C.** from Ministry of Defense, Government of India
- 1998 Certificate of Honor** by District Education Office, Surat, India.  
Many other Prizes and Certificates in different fields.

## EXPERIENCE

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- **Neutron reflectometry, specular and off-specular:** SURF, ISIS, Rutherford Laboratory, UK.
- **X-ray reflectometry:** Research School of Chemistry, Australian National University, Canberra.
- **SAXS, SANS:** Research School of Chemistry, Australian National University, Canberra; LOQ, ISIS, Rutherford Laboratory, UK; Bhabha Atomic Research Center, Mumbai, India.
- **Surface techniques:** Langmuir trough, Surface tensiometry, Brewster Angle Microscopy, Contact Angle, Confocal Microscopy.
- **Chemical techniques:** Light Scattering, Rheology, SEM, GPC, UV-VIS., Fluorescence Spectroscopy, NMR, DSC, ITC, FT-IR, Ion selective electrodes for surfactant solution.
- **Chemical Synthesis:** Surfactant synthesis, RAFT synthesis and RAFT modeling.

## REFERENCES

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<b>Prof. J. W. White, CMG, FAA, FRS</b> Research School of Chemistry The Australian National University Canberra ACT 0200, Australia Ph. +61 2 6125 3578 E-mail: jww@rsc.anu.edu.au	<b>Prof. P. Bahadur, D.Sc.</b> Department of chemistry, V. N. S. G. University, Surat-395007, India Ph. +91-261-2222647 E-mail: pbahadur2002@yahoo.com	<b>Dr. V.K. Aswal, Scientist-E</b> Solid State physics Division B A R C Trombay, Mumbai-400085, India Ph. +91-22-25594606 E-mail: vkaswal@apsara.barc.ernet.in
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## ADDITIONAL INFORMATION

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- Competence in Windows OS, MAC OS, IGOR, Endnote, Operation Research, Origin, Computer Organization & Fundamentals of Operating Systems, 'C' & Data Structure, GUI Tools.
- Pollution monitoring vocational training by Envision Engineering, Surat.
- Seven year teaching experience of higher-level Chemistry and Science, India.
- Chemistry tutoring experience, Australia.
- Delivered many lectures on different topics from Analytical and Physical chemistry.
- Member of Indian Society for Surface Science and Technology (ISSST), India.

## PUBLICATIONS

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- [1] "Nano- and Microstructure of the Interfaces between Air, Oil and Water" Duncan J. McGillivray, Jitendra P. Mata, John W. White, Johann Zank, Langmuir **(2008)** (Accepted).
- [2] "Effect of Phenol on the Aggregation Characteristics of an Ethylene Oxide-Propylene Oxide Triblock Copolymer P-65 in Aqueous Solution" J. P. Mata, P. R. Majhi, O. Kubot, A. Khanal, K. Nakashima, P. Bahadur, J. Colloid Interface Science 320 **(2008)** 275–282.
- [3] "Aggregation Behavior of Pluronic-L64 In Presence of Sodium Dodecyl Sulphate in Water" J. P. Mata, P. R. Majhi, Yamashita, A. Khanal, K. Nakashima, P. Bahadur, J. Dispersion Sci. & Tech. 29 **(2008)** 1248–1256.
- [4] "Study of Salt and Ionic Surfactant Effects on the Micellization of P123, F127 Block Copolymers in Aqueous Solution by Dynamic Light Scattering" Bhavesh Bharatiya, Jitendra Mata, Goutam Ghosh, P. Bahadur, J. Dispersion Sci. & Tech. 29 **(2008)** 696 - 701.
- [5] "Conductometry and Thermodynamics Study of Metal Dodecyl Sulfates in Aqueous Solution" Tejas Joshi, Jitendra Mata and Tejas Patel, J. Dispersion Sci. & Tech. 28 **(2007)** 1158-1163.

- [6] "A Phenol-Induced Structural Transition in Aqueous Cetyltrimethylammonium Bromide Solution" J. P. Mata, V. K. Aswal, P. A. Hassan and P. Bahadur, *J. Colloid Interface Science* 299 (2006) 910-915.
- [7] "Interaction of Cationic Surfactants with Carboxymethylcellulose in Aqueous Media" Jitendra Mata, Jaykumar Patel, Nirmesh Jain, Gautam Ghosh and P. Bahadur *J. Colloid Interface Science* 297 (2006) 797-804.
- [8] "Hydrodynamic and Clouding Behavior of Triton X-100 + SDS Mixed Micellar Systems in the presence of Sodium Chloride" Jitendra Mata, *J. Dispersion Sci. & Tech.* 27 (2006) 49-54.
- [9] "Concentration, Temperature and Salt-Induced Micellization of a Tri Block Copolymer Pluoronic L64 In Aqueous media" J. P. Mata, P. R. Majhi, C. Guo, H. Z. Liu, and P. Bahadur, *J. Colloid Interface Science* 292 (2005) 548-556.
- [10] "Micellization and Interaction of Anionic and Nonionic Mixed Surfactant Systems in Water" Tejas Joshi, Jitendra Mata, P. Bahadur *Colloid and surfaces – A*, 260 (2005) 209-215.
- [11] "Structural Transitions of Cetyltrimethylammonium Bromide Micelles in Aqueous Media: Effect of Additives" A. Desai, D. Varade, J. Mata, V. Aswal, P. Bahadur *Colloid and surfaces – A*, 259 (2005) 111-115.
- [12] "Aggregation behavior of quaternary salt based cationic surfactants" J. Mata, D. Varade, P. Bahadur, *Thermo Chemica Acta*, 428 (2005) 147-155.
- [13] "Mixed Systems of a PEO-PPO-PEO Block Copolymer and Ionic Surfactant in Water and Salt Solutions" J. Mata, T. Joshi, D. Varade, G. Ghosh, P. Bahadur, *Colloids and surfaces – A*, 247 (2004) 1-7.
- [14] "Effect of Tetrabutylammonium Bromide on the Micelles of Sodium Dodecyl Sulfate" J. Mata, D. Varade, G. Ghosh, P. Bahadur, *Colloids and surfaces – A*, 245 (2004) 69-73.
- [15] "Clouding & Micellar Behavior of Ethylene Oxide-Propylene Oxide- Ethylene Oxide (EPE and PEP) Block Copolymers & their Mixtures from Aqueous Solution" Hemant Ankleshwaria, Jitendra Mata, and Pratap Bahadur, *Tenside Surf. Detergents*, 40 (2003) 303-308.
- [16] "Mixed Micelles of Sodium Cholate and Cetyltrimethylammonium Bromide in Aqueous Salt Solution" J. P. Mata, P. Bahadur (in preparation).
- [17] "Anomalous Surface Activity of Ammonium Nitrate Solutions" Jitendra P. Mata, John W. White (in preparation).
- [18] "The Stability of High Internal Phase Emulsions at Low Surfactant Concentration Studied by Small Angle Neutron Scattering" Philip A. Reynolds, Duncan J. McGillivray, Jitendra P. Mata, Peter Yaron and John W. White (in preparation).
- [19] "Stability of High Internal Phase Emulsions Under Shear" Jitendra P. Mata, Peter Yaron, Duncan J. McGillivray, Philip A. Reynolds and John W White (in preparation).

#### OTHER

- [20] "Polymer Trivia" Jitendra Mata, Ravi Dawda, *Science Reporter*, NISCAIR (Accepted).
- [21] "Quiz Time, Chemistry" Jitendra Mata, *Science Reporter*, NISCAIR, 44 (2007) 50.

#### CONFERENCE/SYMPOSIUM/WORKSHOP

##### PAPERS PRESENTED

- [1] "USANS Studies on Packing of Hard Spheres and High Internal Phase Emulsions" 1st Instrument Advisory Team Meeting For the Very Low-Q Neutron Scattering Instrument, Kookaburra, ANSTO, September 2008.
- [2] "Scattering Techniques for Nanoaggregates of Soft Matter" ANSTO – AINSE Neutron School on Diffraction in collaboration with IAEA, Sydney, Australia, November 2007
- [3] "Block Copolymer Nanoaggregates: their Characterization and Use in Different Applications" 2007 Japan-Australia Symposium as a part of the 60th Divisional Meeting on Colloid and the Chemical Society of Japan, Matsumoto, Japan, September 2007.
- [4] "Concentration, temperature and salt-induced micellization of a tri block copolymer pluoronic L64 in aqueous media" at National Seminar on Polymer Materials Organize Jointly by PSMPAF, kolkata and ATIRA, Ahmedabad, India, December 2005.
- [5] "Effect of Phenol on the Aggregation Characteristics of An Ethylene Ozide-Proylene Oxide Triblock copolymer P65 in Aqueous solution" at "National Seminar on Polymers, Surfactants & Gels" Organize jointly by ISSST, WIC-ISSST and Department of Chemistry, M. S. University, Baroda, and ZYDEX industries Baroda, India, March 2005.

- [6] "A Phenol-Induced Structural Transition in Aqueous Cetyltrimethylammonium Bromide Solution" at "International Conference on Soft Matter (ICSM-2004)" Organize by ISSST and Centre for Surface Science, Department of Chemistry, Jadavpur University, Kolkata, India, November 2004.
- [7] "Effect of Tetrabutylammonium Bromide on the Micelles of Sodium Dodecyl Sulfate" at "Eleventh National Conference on Surfactants, Emulsions & Biocolloids (NATCOSEB – XI)" Organize jointly by IIT, ISSST, MUICT, Mumbai, India, December 2003.
- [8] "Clouding & Micellar Behavior of Ethylene Oxide-Propylene Oxide- Ethylene Oxide (EPE and PEP) Block Copolymers & their Mixtures from Aqueous Solution" at "National Symposium on Polymer Science" Organized by Department of Chemistry, S. P. University, Vallabh Vidyanagar, Anand, India, December 2002.

#### **ATTENDED**

- [9] ANSTO Workshops on Nanoscience and Nanotechnology I. Thin-Films and Surfaces, April 2008.
- [10] "5th All Gujarat Research Scholars' Meet (AGRSM-V)" organized by Indian Chemical Society Vadodara Chapter, Faculty of Technology and Engg. M. S. University, Vadodara, India, February 2008.
- [11] "Australian Colloid and Interface Symposiu- ACIS 2007" Sydney, Australia, February 2007
- [12] "A National Workshop on Different Aspects of Electron microscopy" Organized by S. V. National Institute of Technology, Surat, India, March 2006.
- [13] "4th All Gujarat Research Scholars' Meet (AGRSM-2006)" organized by Indian Chemical Society Vadodara Chapter, Faculty of Technology and Engg. M. S. University, Vadodara, India, January 2006.
- [14] "Workshop on Surfactants: Theory and Practice" Organized by Department of Chemistry, M. S. University, Baroda, India, December 2005.
- [15] "National Workshop on Spectroscopy & Theoretical Chemistry" organized by Department of Chemistry, M. S. University, Baroda, and ZYDEX industries and ISAS, Baroda, February 2005.
- [16] "4th Workshop on Surfactants: Theory and Practice" Jointly organized by Department of Chemistry, M. S. University, Baroda, and ZYDEX industries Baroda, India, December 2004.
- [17] "National Workshop on Advanced Methods for Materials Characterization (NWMC)", under the auspices of Material Research Society of India (MRSI) and BARC-Mumbai, India, October 2004.
- [18] "Seminar on Elemental Analysis in Petrochemical Industry", jointly organize by Indian Society of Analytical Scientists, Baroda Chapter and Reliance Industries Limited, Hazira, India, May, 2004.
- [19] "Workshop on Surfactants: Theory and Practice" Organized by Department of Chemistry, M. S. University, Baroda, India, December 2003.
- [20] "Second Refresher Course on Colloid and Interface Science" at the Institute of Chemical Technology, University of Mumbai, India, January 2003.
- [21] "Workshop on Surfactants: Theory and Practice" jointly organized by Department of Chemistry, M. S. University, Baroda, and Western India Chapter of ISSST, Mumbai, India, December 2002.