SUJIT KUMARR SHAH

Date of Birth: 14 August, 1981

Department of Chemistry, Mahendra Morang Adarsh Multiple Campus, Tribhuvan University

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EDUCATION

*2021 Post Doctorate (Construction of Mesoporous Carbon Dots from Surfactant for the treatment of Organic Pollutants), University of Miami, Florida, USA.

2016 *Ph.D.* (Surfactant Chemistry), Tribhuvan University (NEPAL). Dissertation: *Solution properties of cationic surfactants in alcohol-water mixed solvent media.* Dissertation chair: Professor Sujit Kumar Chatterjee, Dr. Ajaya Bhattarai

2006 *M.Sc.* (Physical Chemistry), Central Department of Chemistry, Tribhuvan University (NEPAL)

2002 *B.Sc.* (Physcis, Chemistry, Mathematics and English), M. M. A. M. Campus, Tribhuvan University (NEPAL)

RESEARCH INTERESTS

Surfactant Chemistry: Systematic and comprehensive study of the solution behavior of a surfactant in mixed solvent media using tensiometry, conductometry, densitometry, and viscometry. I live in under developed country where we need to carry research work with limited resources, instrument and funds. Most of the place of country is covered by hill where people hardly can manage drinking water. My desire to make mesoporous adsorbent with the help of surfactant that can purify household used water for reuse. I also have keen interest to investigate the use of micellar system in medicine and drug delivery.

WORK EXPERIENCE

March 2017 - present *Assistant Professor*, Mahendra Morang Adarsh Multiple Campus, Biratnagar, Tribhuvan University, NEPAL

April 2009 – March 2017 *Teaching Assistant*, Mahendra Morang Adarsh Multiple Campus, Biratnagar, Tribhuvan University, NEPAL

COURSES TAUGHT AND OTHER SERVICES

Teaching Physical Chemistry especially Surface Chemistry, Thermodynamics and Electrochemistry for graduate and post graduate levels, guiding B.Sc., M.Sc. Dissertation students in the fields of Surfactant Chemistry.

LIST OF PUBLICATIONS

Neelam Shahi, **Sujit Kumar Shah**, Amar Prasad Yadav, Ajaya Bhattarai, The spectral study of azo dye and cationic surfactant interaction in ethanol – water mixture, accepted for publication in Journal of Serbian Chemical Society, 2021.

Sujit K. Shah, A. Bhattarai, Interfacial and Micellization Behavior of Cetyltrimethylammonium Bromide (CTAB) in Water and Methanol-Water Mixture at 298.15 to 323.15K, Journal of Chemistry, 1 – 13 (2020)

Yubaraj Ghimire, Sharmila Amatya, **Sujit Kumar Shah**, Ajaya BhattaraiThermodynamic properties and contact angles of CTAB and SDS in acetone–water mixtures at different temperatures, SN Applied Sciences 2:1295 (2020)

Tulasi Prasad Niraula, **Sujit K. Shah**, Sujeet Kumar Chatterjee, A. Bhattarai, "Effect of methanol on the surface tension and viscosity of sodium-dodecyl sulfate (SDS) in aqueous medium at 298.15 to 323.15 K" *Karbala International Journal of Modern Science*, 4, 26-34(2018).

Sujit K. Shah, Sujeet Kumar Chatterjee, A. Bhattarai, "Micellization of cationic surfactants in alcohol-water mixed solvent media" *Journal of Molecular Liquids*, 222, 906–914 (2016).

Sujit K. Shah, Sujeet Kumar Chatterjee, A. Bhattarai, "Effect of methanol on viscosity of aqueous solutions of cationic surfactants at 298.15 to 323. 15 K" *Journal of Chemistry*, 1-5(2016).

Sujit K. Shah, Sujeet Kumar Chatterjee, A. Bhattarai, "The effects of methanol on the micellar properties of dodecyltrimethylammonium bromide (DTAB) in aqueous medium at different temperatures" *Journal of Surfactants and Detergents* 19, 201-207(2016).

Sujit K. Shah, A. Bhattarai, Sujeet Kumar Chatterjee, "Densities and partial molar volumes of dodecyltrimethylammonium bromide in binary systems (methanol+water) at T= (298.15 to 323.15) K" *American Journal of Chemical Engineering*, 2(6), 76- 85(2014).

A. Bhattarai, **Sujit K. Shah**, Kuber Limbu, "Viscometric Studies of Sodium Dodecyl Sulfate in presence and absence of Na_2SO_4 and $ZnSO_4$ in aqueous media at room temperature" *J. Harmoniz. Res. Appl. Sci.* 2(4), 288-294(2014).

Kuber Limbu, **Sujit K. Shah**, Ajaya Bhattarai, "Density and partial molar volume of Sodium Dodecyl Sulfate in presence and absence of Sodium Sulfate and Zinc Sulfate in distilled water", *Bibechana*, 16, 131-136 (2019).

A. Bhattarai, **Sujit K. Shah**, Kuber Limbu, "Conductance of Sodium Dodecyl Sulfate in presence and absence of Na_2SO_4 and $ZnSO_4$ in aqueous media at room temperature" *Scientific World*, Vol.12, issue 12, 41-43(2014).

Kuber Limbu, **Sujit K. Shah**, A. Bhattarai "Micellization behaviour of Sodium Dodecyl Sulphate in presence and absence of Sodium Sulphate and Zinc Sulphate in distilled water by Surface tension measurement", *Bibechana*, 11, 79-85(2014).

C.D. K Yadav, **Sujit K. Shah**, Tulasi Prasad Niraula and A. Bhattarai," Conductance of sodiumdodecyl sulphate (SDS) in pure water and different solvent composition of ethanol-water mixed solvent media at 318.15 K "*TUTA*, Biratnagar, 6, 60- 66(2013).

Sujit K. Shah, A. Bhattarai and Sujeet Kumar Chatterjee, "Applications of Surfactants in modern Science and Technology'' published in *Modern Trends in Science and Technology*, pp. 147-158(2013).

Nabin Basnet, Ratna Bahadur Thapa, Rajendra Dhakal, Dilli Ram Polharel, **Sujit K. Shah** and A. Bhattarai "Study the effect of ethanol on the conductivity of Potassium Nitrate at different temperatures"published in *Modern Trends in Science and Technology*, pp. 136-146(2013).

A. Bhattarai, **Sujit K. Shah**, Ashok Kumar Yadav, Janak Adhikari "Effect of solvent composition on the critical micelle concentration of sodium deoxycholate in ethanol-water mixed solvent media" *Bibechana, A Multidisciplinary Journal of Science, Technology and Mathematics*, 9, 63-68(2013).

Tulasi Prasad Niraula, **Sujit K. Shah**, A. Bhattarai and Sujeet Kumar Chatterjee"Anionic Surfactants and their uses in different fields" *Samadharsi Journal, Sharwan*, 51-55(2012).

Sujit Kumar Shah, Tulasi Prasad Niraula, A. Bhattarai and Sujeet Kumar Chatterjee "Cationic Surfactants and their uses in different fields" *TUTA Journal, Bhadra*, 33-37(2012).

A. Bhattarai, **Sujit K. Shah**, Ashok Kumar Yadav "Effect of solvent composition on the critical micelle concentration of cetylpyridinium chloride in ethanol-water mixed solvent media" *Nepal Journal of Science and Technology* , Volume 13, No. 1, 89-93(2012).

Sujit K. Shah, Tulasi Prasad Niraula, A. Bhattarai, Sujeet Kumar Chatterjee "Effects of Alcohols on the physico-chemical properties of Surfactant solutions'' *The Paradox*, Volume 1, 12-16(2012).

A. Bhattarai, **Sujit K. Shah**, Sujeet Kumar Chatterjee "Effects of Concentration, Temperature and Solvent Composition on the Conductivity of Potassium Nitrate in Methanol-Water mixed Solvent Media", *Journal of Institute of Science and Technology*, Vol.17, pp. 180-186(2011-12).

Sujit K. Shah, Tulasi Prasad Niraula, A. Bhattarai, Sujeet Kumar Chatterjee "A Comparative study of cationic and anionic surfactants on the micellar behaviour through different composition of methanol-water mixed solvent media at 308.15 K by Conductometric Method", *Bibechana, A Multidisciplinary Journal of Science, Technology and Mathematics*, 8, 37-45(2012).

Sujit K. Shah, A. Bhattarai, Sujeet Kumar Chatterjee, "Surfactants, its applications and effects on environment" *Bibechana, A Multidisciplinary Journal of Science, Technology and Mathematics*, 7, 61-64 (2011).

Sujit K. Shah, Ghanashayam Srivastav, A. Bhattarai, Sujeet Kumar Chatterjee, "The Effects of Concentration, Temperature and Solvent Composition on the Partial Molar Volumes of Cetyltrimethylammonium Bromide in Methanol – Water Solvent Media", *Journal of Nepal Chemical Society*, Vol. 24, 24-30(2009).

Published Books:

Sujit Kumar Shah, Sujeet Kumar Chatterjee, Ajaya Bhattarai, Book Chapter**, "**The Viscosity of Cationic Surfactants in the Absence and Presence of Methanol at Different Temperatures" Chapter 11 **Current Perspectives on Chemical Sciences,** Print ISBN: 978-93-90149-65-0, eBook ISBN: 978-93-90149-23-0, May 2020.

AWARDS AND FELLOWSHIPS

Fulbright fellowship for postdoctoral research in University of Miami, 1 April 2021 – 31 December 2021.

First prize award for young scientist awarded by Ministry of Social Development, Province 1, Nepal Dated: 5 July 2019.

Received "Nepal Bidhya Bhusan-KA" Award by the President of Nepal Honorable Bidhya Devi Bhandari on September 8, 2018.

The World Academy Sciences (TWAS) Award for Young Scientist for the year 2017 in Chemistry.

Travel Grants from U.G.C. for 6th Asian Conference on Colloid and Interface Sciences, Nagasaki, Japan, November 24-27, 2015.

Travel Grants from N.A.S.T. for 6th Asian Conference on Colloid and Interface Sciences, Nagasaki, Japan, November 24-27, 2015.

Young Scientist Award – Awarded by committee of International Conference on Advanced Materials and Nanotechnology (ICAN) – 2014, Kathmandu, Nepal.

University Grants Commission (UGC) fellowship for Ph. D. work in 30 May 2010

FUNDED RESEARCH GRANTS

Working as team member on "To study the micellar properties of cationic and anionic surfactants in mixed solvent media of water and organic solvent "funded by TWAS research grant Programme in Basic Sciences, Italy from 03/2018

CONFERENCE AND SEMINAR ORGANIZER

The organizing committee member of "The 8th Asian Conference on Colloid & Interface Science to be held in Kathmandu, Nepal (September 24-27, 2019).

The organizer committee member of Conference on Modern Trends in Science and Technology, Biratnagar, Nepal (December 28-29, 2012).

Local organizing committee member of the Region Chemistry Seminar 2011(May 7-8, 2011).

The organizing committee member of the Eastern Region Chemical Symposium 2010, Biratnagar, Nepal (May 14-15, 2010).

EXPERIENCE OF GUIDING RESEARCH

Co-supervisor of Ph. D. student Neelam Shahi, thesis entitled "Cationic surfactants interaction with azo dyes in mixed solvent media and anti-corrosion ability of surfactants"

Supervisor for three M.Sc. students' thesis work at department of chemistry, Mahendra Morang Adarsh Multiple Campus (T.U.), Biratnagar, Nepal.

Supervisor for Six B.Sc. student's thesis work at department of chemistry, Mahendra Morang Adarsh Multiple Campus (Tribhuvan University), Biratnagar, Nepal.

PROFESSIONAL MEMBERSHIP

Life Member, Nepal Chemical Society, Nepal since 2011.

Member, American Chemical Society, USA since 2021

LANGUAGE PROFICIENCIES AND TECHNICAL SKILLS

Languages: Fluent in Nepali, English and Hindi

Technical Skills: Strong knowledge on Chemwin, Qbasic Programming, Equation Editor, Power Point presentation, Pye-Unicam PW 9509 conductivity meter, Tensiometer, Ostwald-Sprengel type pycnometer, Schultz-Immergut-type viscometer, Origin 6.1, LATEX and HTML word processing skills, Easy Plot Programming, Density meter(Anton Paar DMA), UV-visible spectrophotometer, AAS, GC-MS

PROFESSIONAL PRESENTATIONS

Poster presentation on Study of Thermodynamic properties, Contact angles and Surface free energies of Cetyltrimethylammonium bromide in water and acetone-water mixture, The 4th International Conference on Advance Pharmacy and Pharmaceutical Sciences (ICAPPS), to be held from October 23 -27 , 2019 in Bali, Indonesia.

Oral presentation on "Micellization Behavior of Cetyltrimethylammonium Bromide in Water and Methanol-Water Mixture at 298.15 to 323.15 K: A Tensiometry approach" ACCIS – 2019 Sept 24 – 27 2019, Kathmandu, Nepal.

Invited Lecture on "Investigation of physicochemical properties of cationic surfactants in alcohol-water mixed solvent media", International Chemical Congress, March 8 – 10 2018, Chitwan, Nepal.

Paper presented on "Effect of methanol on surface properties of cetyltrimethylammonium bromide (CTAB) at different temperatures", Third International conference, KaSAM, October 17-20, 2016, Pokhara, Nepal

Paper presented on "The effect of Methanol on the micellar properties of Dodecyltrimethlyammonium Bromide (DTAB) in Aqueous Medium at Different Temperature" ACCIS – 2015, Nov 24 – 27, Arkas, Sasebo, Nagasaki, Japan.

Paper presented on "Effect of different volume fractions of ethanol on micellar properties of cationic surfactants in water at 25^{o}C – ICAN – 2014, Nov 4 – 6, 2014, Kathmandu, Nepal.

Paper presented on 'Study on the Surface Tension and Viscosity of Cationic Surfactants in Alcohol-Water by ManSingh's Survismeter' – International Conference on Emerging Trends in Science and Technology, (March 22-23, 2014).

Paper presented on 'Applications of Surfactants in Modern Science and Technology' – Conference on Modern Science and Technology, (December 28-29, 2012)**.**

Poster presented on "A study on the micellization of DTAB in methanol – water mixed solvent media". The Sixth National Conference of Science and Technology – sept. 25 – 27, 2012 Kathmandu, Nepal.

Paper presented on 'Conductometric studies on the effect of KCl on the micellization of Cetyltrimethylamonium bromide (CTAB) in methanol-water mixed solvent media at three different temperatures' – International conference on Advanced Materials and Nanotechnology for sustainable development. – 2011, Kathmandu, Nepal.

ATTENDED TRAINING & WORKSHOPS

Attended TWAS Research Grants Conference on BUILDING SKILLS FOR SCIENTIFIC RESEARCH at Kathmandu on June 4-6, 2019.

Attended Workshop on ISO/IEC 17025:2019 documentation at Nepal Batawaraniya Sewa Kendra, Biratnagar, Nepal. Dated 8 – 10 October 2018.

Attended Instrument Training programme on HPLC, AAS and GC-MS held in Nepal Environmental Service Centre, Nepal, dated: 31 August to 2 September 2018.

COMMUNITY SERVICES

Working as a technical expert for Nepal Batawaraniya Sewa Kendra, an environmental service centre since 15 June 2018.

Working as a technical expert for Laboratory sector in water treatment plant of **Secondary Towns Integrated Urban Environmental Improvement Project, Biratnagar Metropolitan City since 15 may 2019.**

REFERENCES

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