

RESUME

NAME : : DR. MAMATA MUKHOPADHYAY

EDUCATION:

- **B.Ch.E.**, (1963), Jadavpur University, Kolkata, India, First Class (First Rank),
- **M.Tech. in Chemical Engineering**, (1965), Indian Institute of Technology, Kharagpur, W.Bengal
- **Ph.D. in Chemical Engineering**, (1969), Ohio State University, U.S.A.

POSITIONS HELD:

- **Research Associate** (1965-69), National Science Foundation, at the Ohio State University, U.S.A.
- **Assistant Professor**, I.I.T.Kanpur (1969-73), I.I.T. Delhi (1973-76), I.I.T. Bombay (1976-83).
- **Associate Professor** (1984-86), IIT Bombay
- **Professor** (1987-2008), IIT Bombay
- **Professor(Adjunct)**, (2009-2019), IIT Bombay
- **Visiting Scientist**, U.S.-INDIA Scientists' Exchange Program, in the area of Supercritical Fluid Technology, at University of Pennsylvania, the John Hopkins University, Cornell University, U.S.D.A. (Philadelphia) and M.I.T. (May-June, 1992)
- **Visiting Professor** at NJIT, Texas A & M and Texas Tech University (March-May, 1996).
- **Editorial Board Member**(2007-2009), Journal Chemical Technology & Biotechnology, London,UK
- **Guest Editor**, Journal Chemical Technology & Biotechnology, special edition, March.2008
- **Reviewer for** Journal Chemical Technology & Biotechnology, London, U.K and International Journal of Food Engineering , Australia

TEACHING AND RESEARCH AREAS OF INTEREST:

Thermodynamics of Fluid Phase Equilibria, Supercritical Fluid CO₂- Extraction Technology, CO₂-based Processes for Production of Nanoparticles and Food Preservations, Pressurized Hot Water Extraction, Cryogenics Engineering

AWARDS RECEIVED:

- The **Acharya P.C. Ray Award (1964)** by I.I.Ch.E. for the Final Year. B.Ch.E. Design Project
- The **NOCIL Award (1997)** by I.I.Ch.E. for Excellence in Process Plant and Equipment Design
- The **Suman Sharma National Design award(1999)** for the **Best Woman Design Engineer** by the Institution of Engineers (India)
- **Dr. P.K. Patwardhan Award (2001)**for Technology Development and Transfer
- **The Best Ph.D. Thesis Supervised Award (1996)** by the International Society for Advancement of Supercritical Fluids (ISASF), France .
- **Two Best Research Paper Awards** in Chemocon-2003 by IChE
- **The Herdillia Award(2005) for Excellence in Basic Research in Chemical Engineering** by IChE
- **S. K. Mitra Memorial Award (2005) by IChE for the 2nd Best Technical Paper in ICE**
- **Best Research Paper Award (2009)** in Chemcon-2010 by IChE

Publications (in numbers):

**Books : 2; Book Chapters: 2; Research Papers in Peer-reviewed Journals: 82(+4 in progress);
Patents : 7; Others (Proceedings of Conferences & Seminars): 75; Technology/Process Transfer-3**

BOOKS/BOOK CHAPTERS AUTHORED:

- **“Natural Extracts Using Supercritical Carbon Dioxide”**, published by **CRC Press LLC**, Florida, USA, June, 2000
- **“Phase Equilibrium in Solid-Liquid-Supercritical Fluid Systems”**, **Chapter 2 in Supercritical Fluid Technology for Drug Product Development**, Marcel Dekker Inc., New York, March, 2004
- **“Fundamentals of Cryogenic Engineering”**, Prentice Hall of India, New Delhi, 2009
- **"Processing spices using supercritical fluids"**, **Chapter 12 in "Supercritical Fluid Extraction of Nutraceuticals and Bioactive Compounds"**, CRC Press, LLC, Florida, U.S.A., 2007
- **“Serilisation and Preservation Using Supercritical Carbon Dioxide”** under publication by Ane Publishing House, New Delhi 2021

GRANTED PATENTS :

- **“Process for Supercritical Fluid CO₂ Extraction of Fragrances (absolute or essential oils) from Jasmine flowers,”** Indian Patent 183454 (72/Bom/96).
- **“Process for Sequential Supercritical CO₂ Extraction and Fractionation of Neem Oil Enriched with Azadirachtin from Neem kernels”**, Indian Patent 182587 (428/BOM/97).
- **“Sterilization and Preservation of Liquid Food Products with Supercritical Fluids at Moderate Conditions”**, Indian Patent (543/MUM/2004).
- **“A Novel Method for Production of Nanoparticles using Sub-critical Carbon Dioxide”**, Indian Patent (544/MUM/2004).
- **“A Novel Process for Nutraceutical Concentrate using Supercritical Fluid Extraction”**, Indian Patent (545/MUM/2004).
- **“Lipoxygenase-Inactivated and Sterilised Legumes and Cereal Products”** Indian Patent (540 /MUM/2005)
- **“An Improved process for making natural sweetener from stevia leaves”** Indian Patent #274074 (1280/MUM/2008)

SUMMARY OF TEACHING AND RESEARCH CONTRIBUTIONS :

- Taught several core courses and developed of a large number of new interdisciplinary courses at graduate and undergraduate levels. Developed thermodynamics laboratories for teaching and research at three IIT’s. Supervised several B.Tech., M.Tech. and Ph.D. projects, which resulted more than **162** research

publications in reputed international journals and conference proceedings, **seven** patents, **two** books, (**one** more under publication) and **two** book- chapters. Gave Consultations to a number of industries and successful completion of several sponsored projects in the area of process technology development, process design and thermodynamic data generation, as outlined below:

- **Computational models** for generation of Thermodynamic and Phase equilibrium properties, using the EOS and activity coefficient approaches. Process design and simulation studies on distillation, extraction, extractive distillation, and supercritical fluid extraction.
- **Experimental Set ups** for accurate measurement of vapor pressures, dew point and bubble point pressures, P-V-T-X data, critical constants, S-L-E, L-L-E, V-L-E, & S-F-E data.
- **In-house experimental rigs** for batch, semi-continuous and continuous supercritical extraction of natural products.
- **SCFE processes** with innovations for the recovery of (i) essential oils and oleoresins from spices (ii) fragrances from flowers, (iii) herbal extracts / nutraceuticals from plant products (iv) antioxidants from various plant sources, (v) free fatty acids and tocopherol from vegetable oils (vi) toxic organic contaminants from waste water and spent adsorbents regeneration. Methodologies for screening of optimum process conditions and thermodynamic modeling for complex natural product systems. Evaluation of mass transfer models for semi-continuous supercritical extraction process.
- **Updated cost-effective SCFE Technology** for (i) Design and Development of SCFE Pilot Plant (commercial prototype) with two 10-litre Extractors for Processing of Multiple Natural Raw Materials (ii) Technology of Commercial-scale SCFE plant and its Transfer for Manufacture and Marketing
- **Pressurized Hot Water Extraction (PHWE) Technology for recovery of Nutraceuticals**, e.g., Alpha-hydroxy citric acid from kokum rinds, Steviol glycosides from Stevia (*Stevia rebaudiana*) leaves, glycyrrhizic acid from licorice (*Glycyrrhiza glabra*) roots, etc.
- **Parametric & Mechanistic Studies and Modeling on:**
 - (i) ***Cyclohexane oxidation in SCCO₂ medium*** with simultaneous phase separation and generation of multi-component fluid phase equilibrium data at high pressures.
 - (ii) ***Sterilization and stabilization of solid and liquid food products*** for enhancement of safety and shelf-life by deactivating microorganisms and enzymes using supercritical CO₂.
 - (iii) ***Supercritical drying of silica aerogels using supercritical CO₂*** and mathematical modeling for crack-free drying
 - (iv) ***Production of Nanoparticles using supercritical and subcritical CO₂*** and mathematical modeling for narrow particle size distributions
 - (v) ***Loading of Drugs in Silica Aerogels from Supercritical CO₂ Solutions*** and mathematical modeling

SPONSORED RESEARCH GRANTS :

Sponsoring Agency	Duration	Title
1. Council of Scientific and Industrial Research, New Delhi.	1970-73	“Studies on Thermodynamic Properties and Phase Behaviour”
2. Engineers India Ltd., New Delhi.	1985-88	“LLE for Dearomatisation of Petroleum Fractions from Bombay High Crude”
3. Dominus Engineers Ltd., Bombay.	1985	“Selection of Process Parameters and Design of Process Plant for Production of Resorcinol”
4. The Ministry of Environment and Forests, Govt. Of India.	1992-95	“Separation of Hazardous Organics from waste water by SCCO₂Processing”
5. The Ministry of Human Resources and Development, Govt. of India..	1993-99	Food Process Engineering Technology Development and Transfer Mission on “Supercritical Fluid Extraction Systems Design”
6. The Ministry of Human Resources and Development, Govt. of India..	2003-2005	TAT Project : “Micronisation of Pharmaceuticals using Supercritical Carbon Dioxide”
7. User Industries for SCFE Products	1999-2010	“Supercritical Fluid Extraction Systems Development”
8 Dept. of Biotechnology, Govt. of India (as Co-PI) at IIT-GN	2011-2014	A Novel Process for Precipitation of Drug Nanoparticles and Stabilization in Aqueous Suspensions using CO₂

TECHNOLOGY DEVELOPED & TRANSFERED

(i) **Supercritical Fluid Extraction (SCFE) Technology.**

Was the Principal Investigator of the **Food Process Engineering-Technology Development Mission Project**, sponsored by M.H.R.D., New Delhi. **For the first time in India** SCFE Technology was indigenously developed, demonstrated and made commercially viable. **Supercritical Fluid Extraction Systems Design Project** (1993-1998) was successfully executed for achieving the following deliverables:

- **Prototype SCFE pilot plant** (with 2 x10L Extractors) with fully automated instrumentation and control system for supercritical extraction of natural products with innovative design features aimed at substantial cost reduction.
- **Commercial scale plant** (up to 500L Extractor) for multiple products, such as spice oil and oleoresins, natural colors, antioxidants, lipids, nutraceuticals and herbal medicines

- **Transfer of the developed SCFE Technology** for commercialization- i.e. supply of Turn-key SCFE plants (<http://www.che.iitb.ac.in/scfe/index.htm>) to the user industries in India and abroad at a reduced cost from the imported equivalent thus making the SCFE technology economically viable.

(ii) **Stevia Extraction Technology**

Developed a novel process for Production of Natural Sweetener from Stevia Leaves by **Pressurised Hot Water Extraction (PHWE)** using water and carbon dioxide at near-ambient conditions. Subsequently **it was** transferred for commercialization and demonstrated at pilot scale. A prototype PHWE pilot plant was designed, fabricated and demonstrated for the developed process and the process parameters optimized.

(iii) **Process Know for Nutraceutical Concentrate using Supercritical Fluids**

IMPORTANT RESEARCH PROJECTS

(i) **Production of nanoparticles** of Pharmaceuticals using supercritical CO₂ and subcritical CO₂; Analysis of mechanism, mathematical modeling and simulation of precipitation by pressure reduction of gas-expanded liquids (PPRGEL) for production of nanoparticles - Ph.D.Project (April, 2007)

(ii) **Development of a new ligand-assisted SCFE process** with in-situ chelation of metal ions for direct extraction from oxides in order to avoid the usage of nitric acid as in the PUREX process and to overcome co-generation of high level liquid wastes -Ph.D.Project (January, 2007)

(iii) **Process innovations in SCFE technology** using supercritical carbon dioxide (CO₂) for selective recovery and purification of natural concentrates / nutraceuticals enriched with active ingredients -M.Tech. Project (July, 2006)

(iv) **Micronisation of pharmaceuticals using supercritical Carbon Dioxide** -MHRD-sponsored TAT Project 03MH017-(July 2006)

(v) **Recovery of Helium from Ammonia Synthesis Purge Gas based on Natural Gas**

A collaborative project with **the Heavy Water Board**, Mumbai to evaluate different alternative routes and their feasibility studies by modeling and simulation. The project is of unique importance as Helium is available in traces (40 ppm) in Indian natural gas, which is the only large and sustainable source of helium in the country-(July 2006)

(vi) **Sterilization and stabilization** of solid and liquid food products for enhancement of safety and shelf-life by deactivating microorganisms and enzymes using supercritical CO₂ -Ph.D.Project (Sept., 2005)

(vii) **Supercritical drying of silica aerogels** using supercritical CO₂ and mathematical modeling for crack-free drying of alcohols by avoiding vapor-liquid interface -M.Tech.Project (July, 2005)

(viii) **Extraction and Processing of Nutraceuticals with Pressurized Hot Water at Subcritical condition**-M.Tech. Project (July, 2007)

(ix) **Process Development for Silica Aerogels from Rice Husk Ash and Starch Aerogels from Potato for Drug Delivery**, Ph.D. Project (2015)

(x) Production of Ultra-fine Particles using Gaseous (Sub-critical CO₂) and Liquid (Water)

Antisolvent Crystallization, Ph.D. Project (2014-18)

(xi) Formation of Micro/Nano Particles Using In-situ generated CO₂ Bubbles by Pressure Reduction over CO₂-Dissolved Liquid Solutions and by Direct Gas-Bubbling, Ph.D. Project (2014-19)

(xii) Drug Loading in Silica Aerogel from Supercritical Solutions and Release Kinetics, Ph.D. Project (2016-20)

TECHNOLOGY TRANSFER IN PROGRESS:

(i) Production of submicron particles from solutions using subcritical carbon dioxide without any high pressure pumps or nozzles in a short span of time.

(ii) Sterilization and preservation of food and botanical products (e.g., milk, tomato juice, sugarcane juice, coconut water, aloe vera and fruit juice) using supercritical carbon dioxide at moderate conditions

(iii) Production of ‘ready-to-use’ dehulled soybeans and instant soymilk free of beany flavour and chalky mouth-feel by a novel pretreatment technique with supercritical carbon dioxide

(iv) Production of nutraceutical concentrates enriched with lycopene and lutein, the two natural color compounds, and β -carotene, a precursor to vitamin A, from the plant sources: tomato, marigold flower, and carrot respectively using supercritical carbon dioxide

(v) Production of High-value lecithin from crude lecithin in a single step with subcritical carbon dioxide.

SELECTED PUBLICATIONS:

A. In Peer-reviewed Journals

1. Mamata Dutta, "The Effect of Molecular Size on Thermodynamic Excess Functions", Indian Chemical Engineer, Transactions, Vol.13, no.2, 29, April 1971.
2. Mamata Mukhopadhyay, "Uncertainties in Vapour-Liquid Equilibrium Studies", Indian Chemical Engineer, Transactions, Vol.15, no.1, 40, January 1973.
3. Mamata Mukhopadhyay, A.K. Mukhopadhyay, "Process Optimization by Experimentation", Chemical Age of India, Vol.24, No.8, 539, August, 1973.
4. Mamata Mukhopadhyay, A.K. Mukhopadhyay, Nonhydrocarbon Constituents in Petroleum, Chemical Age of India, Vol.25, no.2, 103, February, 1974.
5. Mukhopadhyay, Mamata Mukhopadhyay, "Benzene from Toluene", Chemical Age of India, Vol.25, no.5, 282, May, 1974.
6. Mamata Mukhopadhyay, A.K. Mukhopadhyay, "Lube Aromatic Extracts as Base-Stock for Rubber Plasticizers and Extender Oils", Indian Chemical Engineer, Vol.16, no.2, 24, April, 1974.
7. Ashok Khanna, Amitabha Mukherjee, Mamata Mukhopadhyay, "Isobaric Vapour-Liquid Equilibria of C₇ Hydrocarbon-Alcohol Systems", Indian Journal of Technology, Vol.12, 239, June, 1974.
8. Mamata Mukhopadhyay, "Prediction of Binary Azeotropes", I. and E. C., Process Design and Development, Vol.14, 195, Feb. 1975.
9. Ashok Khanna, Mamata Mukhopadhyay, "Prediction of Isobaric and Isothermal Vapour-Liquid Equilibria from limited experimental data", Journal of Applied Chem. and Biotech., Vol.25, No.12, 935, 1975.

10. C.P. Agarwal, Mamata Mukhopadhyay, "Prediction of Azeotropic Locus on P-T-X space", Indian Chemical Engineer, Trans., Dec. 1975.
11. Mamata Mukhopadhyay, A.K. Mukhopadhyay, "A Thermodynamic Method for Optimization of Process Conditions", Chemical Age of India, Vol.27, No.8, 696, Aug., 1976.
12. Mamata Mukhopadhyay, "A Method for Prediction of Thermodynamic Properties and Vapour-Liquid Equilibria", Chemical Age of India, 261, Vol.29, No.4, April, 1978.
13. A.K. Mukhopadhyay, Mamata Mukhopadhyay, "R & D in Cryoengineering in India", Indian Chemical Engineer, Vol.20, No.4, 12, Oct. 1978.
14. Mamata Mukhopadhyay, "A Thermodynamic Method for Selection of Solvents and Process Conditions for Aromatics Extraction", Journal of Chemical Technol. and Biotech., Vol.29, 634, 1979.
15. M. Mukhopadhyay, "Helium Sources and Recovery Processes", Cryogenics, 244, May, 1980.
16. M. Mukhopadhyay, R.C. Awasthi, "K-value predictions for the Methane-Ethane-Propane System", Cryogenics, 345, June, 1981.
17. M. Mukhopadhyay, K. Sahasranaman: "Computation of Multicomponent Liquid-Liquid Equilibrium Data for Aromatics Extraction Systems", I. and E.C., Process Design and Development, Vol.21, 632, Oct., 1982.
18. M. Mukhopadhyay, K. Dongaonkar, "Prediction of L-L-E in Multicomponent Aromatics Extraction Systems using the UNIFAC Group Contribution Model", I. and EC, Process Design and Development, Vol.22, no.3, 521, 1983.
19. M. Mukhopadhyay, P.S. Kanagali, "Argon Sources and Recovery Processes", Chemical Age of India, Vol.34, no.12, 769, 1983.
20. M. Mukhopadhyay, A.S. Pathak, "Infinite Dilution Activity Coefficients from Ebulliometric Isobaric Boiling Point-Composition Data", J.Chem.Engg. and Data, April, Vol.31, 1986.
21. M. Mukhopadhyay, A.S. Pathak, "L-L-E Data for Process Engineering Calculations in Aromatics Extraction Systems Using the Modified UNIFAC MODEL", I and EC, Process Design and Development, Vol.25, no.2, 1986.
22. M. Mukhopadhyay, B.D.Malleswara Rao: "Studies on Selectivities of Solvents for Liquid-Liquid Extraction of C₇-C₁₀ Aromatics, Trans.Indian Chemical Engineer, Vol.29, no.4, 52, Oct. 1987.
23. M. Mukhopadhyay: "Recovery, Purification and Liquefaction of CO₂ from Distillery Waste Gases", Chemical Engineering World, Vol.23, no.8, 59, August, 1988.
24. M. Mukhopadhyay, M. Sohani: "Solvent Extraction of Resorcinol", Journal of Chemical Engineering and Data, March, 1989.
25. V. S. Gangadhara Rao, M. Mukhopadhyay, "Influence of Binary Interaction Parameter on the Prediction of SCF Phase Equilibrium Data", Trans. Indian Chemical Engineer, Vol.31, no.3, 27, July, 1989.
26. V. S. Gangadhara Rao, M. Mukhopadhyay, "Effect of Co-volume Dependency of the Energy Parameter on the Predictability of SCFE Data Using PR EOS", The Journal of Supercritical Fluids, Vol.2, no.1, 22, March, 1989.
27. R. D Mithani, M. Mukhopadhyay, "Utilisation of Alternative Energy for Preservation of Fruits - A Case Study" Chemical Engg. World, Vol.25, 19, 1990.
28. V. S. Gangadhara Rao, M. Mukhopadhyay, "Solid Solubilities in Supercritical Fluids from Group Contributions", The Journal of Supercritical Fluids, Vol.3, no.2, 66, June 1990.
29. M. Mukhopadhyay, Y.S.N. Malleswara Rao, "Solvent-Selectivity Behavior of Mixed Solvent for Aromatics Extraction", Indian Chemical Engineer, Trans. Vol.33, no.4, T 141, Oct. 1991, 81.
30. M. Mukhopadhyay, et al. "Modeling Specific Interactions for Supercritical Extraction of Fragrances", The Journal of Supercritical Fluids, Vol.5, no.1, 19, March 1992.
31. S. V. G. K. Sastry, M. Mukhopadhyay: "Modeling Dilute Supercritical Mixtures Utilising Solvent-Cluster Interactions", The Journal of Supercritical Fluids, Vol.6, 21-30, March, 1993.
32. M. Mukhopadhyay and G. V. R. Rao,: "Thermodynamic Modeling for Supercritical Fluid Process Design", Ind. Eng. Chem. Res, Vol.32, 922-930, May 1993.
33. P. Srinivas, M. Mukhopadhyay: "Oxidation of Cyclohexane in Supercritical Carbon dioxide Medium", Ind. Eng. Chem. Res, Vol. 33, 3118-3124, November 1994.

34. S. V. G. K. Sastry, M. Mukhopadhyay, "Fragrance Extraction from Jasmine Flowers Using Supercritical Carbon dioxide", Indian Chemical Engineer Trans., Vol. 36, No. 4, 167, 1994.
35. S. V. G. K. Sastry, M. Mukhopadhyay, "Solubility Behaviour of Supercritically extracted Jasmine Fragrance and constituents in Dense CO₂", J. Separation Science and Technology, Aug. 1995.
36. M. Mukhopadhyay, M.K. Nath: "Removal of free fatty acids from Rice bran and cotton seed oils by SC CO₂" Indian Chemical Engineer, Vol.37, No.1, 53, 1995.
37. M. Mukhopadhyay, P. Srinivas, "Multicomponent Solubilities of Reactants and Products of Cyclohexane Oxidation in Supercritical Carbon Dioxide", Ind. Eng. Chem. Res, 35, 4713-4717, Dec. 1996.
38. M. Mukhopadhyay, Shyamal K. De: "Fluid Phase Behaviour of Close Molecular Weight Fine Chemicals in SC CO₂", Journal of Chemical Engg. and Data, Vol. 40, No. 4, 909, July 1995.
39. M. Mukhopadhyay, Rajeev Kumar: "Parametric Study and Mass Transfer Modeling of Supercritical CO₂ Extraction of Clove Oil", Indian Chemical Engineer, Vol.40, No. 2, 109, 1998.
40. P. Srinivas and M. Mukhopadhyay and: "Influence of Thermodynamic State on Cyclohexane Oxidation Kinetics in Carbon Dioxide Medium", Ind. Eng. Chem. Res., Vol. 36, 2066-2074, June, 1997.
41. M. Mukhopadhyay, S. Roy, S. Pandit, S. Baser, "Emergence of SCFE as Cost Effective and Eco-friendly Technology," Indian Chemical Engineer, Sec. B, Vol. 39 (3), July- Sept. 1997
42. M.Mukhopadhyay, S.Roy, S. Pandit, S.Baser, "Supercritical Fluid Extraction Systems Design and Commercialisation", Chemical Weekly, Nov. 18,1997
43. K. S..Ray, M.Chheda, M. Mukhopadhyay. " Performance of Conventional and Supercritical Extraction Methods for β -Carotene Recovery from Non-edible Leaves", Journal Food Science and Technology, Vol.37, no.5, 514-516, 2000
44. M. Mukhopadhyay, Niyati Bhattacharya, " Supercritical Fluid Dyeing of Textile Fibres with Natural Dyes",: Colourage, 21, August 2001
45. Mamata Mukhopadhyay, Sandip Roy, "Supercritical Technology-An Overview" Chemical Engineering World, 26-28, June 2002
46. M.Mukhopadhyay, "Partial Molar Volume Reduction of Solvent For Solute Crystallization Using Carbon Dioxide as Antisolvent", The Journal of Supercritical Fluids, vol. 25, No.3, 213-223, April 2003
47. M.Mukhopadhyay, S.V. Dalvi, " Partial Molar Volume Fraction of Solvent in Binary (CO₂-Solvent) Solution for Solid Solubility Predictions", The Journal of Supercritical Fluids, Volume 29, Issue 3, 221-230, May 2004
48. M.Mukhopadhyay, Nitin Joshi, " Supercritical Carbon Dioxide Fractionation of Vitamins E & A from Vegetable Sources" Indian Chemical Engineer, Section A, Vol. 45, No.3, July-September, 2003
49. M. Mukhopadhyay, Sanjay Singh, "Refining of Crude Lecithin Using Dense Carbon dioxide as Antisolvent", The Journal of Supercritical Fluids, Volume 30, Issue 2, 201-211, July 2004
50. Mukhopadhyay, S.V. Dalvi, "Mass and Heat Transfer Analysis of SAS: Effects of Thermodynamic States and Flow Rates on Droplet Size", The Journal of Supercritical Fluids, Volume 30, Issue 3, 333-348, August 2004
51. M.Mukhopadhyay, S.V. Dalvi, "Analysis of Supersaturation and Nucleation in a Moving Solution Droplet with Flowing Supercritical Carbon Dioxide, J.Chem Technol Biotechnol, Vol. 80, 445-454, February 2005.
52. M.Mukhopadhyay, S.V. Dalvi, "A New Prediction Method for Ternary Solid-Liquid-Vapor Equilibrium from Binary Data", the Journal of Chemical and Engineering Data, no. 4,1283-1289, June 2005
53. Subhashis Ghosh, Chiranjib Bhattacharjee, Mamata Mukhopadhyay, "Polymerisation in Supercritical Carbon Dioxide: A Review", Indian Chemical Engineer, Section A, Vol.47, no.4, October-December, 2005, 224-234
54. Anuradha Chakraborty and Mamata Mukhopadhyay, " The Juicy Trail Using Supercritical Carbon Dioxide to Preserve Aloe Juice", Modern Food Processing, Nov-Dec, 2005, 36-39
55. Mamata Mukhopadhyay, Novel Processes Utilising Unique Properties of Carbon dioxide, Update, No.1, 2006, IRCC Publication, IIT Bombay
56. Sameer V. Dalvi and M.Mukhopadhyay, "Parameters Controlling Supersaturation by DELOS Using Carbon Dioxide" Journal of Chemical and Biotechnology, volume 81 (7), 2006, 1267-1270

57. Anuradha Chakraborty Chatterjee, M.Mukhopadhyay, "A healthier and Tastier Way to Soy milk, Modern Food Processing, Vol. 2, No. 2, 2006, 46-50.
58. Sameer V. Dalvi and Mamata Mukhopadhyay, "A New Generalized Method for the Predictions of Liquid Molar Volumes of CO₂-expanded Solvents", Industrial and Engineering Chemistry Research, volume 46, 2007, page 8282-8287
59. Sameer V. Dalvi and Mamata Mukhopadhyay, "Large and Rapid Temperature Reduction of Organic Solutions Using Subcritical Carbon Dioxide, Volume 53, No. 11 A.I.Ch.E.J. November, 2007, 2814-2823
60. Mamata Mukhopadhyay and Hiren Karamata, "A Novel Process for Supercritical Fluid Extraction of Nutraceuticals Enriched with Carotenoids" Indian Chemical Engineer, Vol.50, no.2, 2008, 116-121.
61. Mamata Mukhopadhyay, Chetan K.R. Patel, "'Purification of phytochemicals by gas antisolvent precipitation with carbon dioxide" Indian Chemical Engineer, Vol. 50, no.3 2008
62. Tessy Vincent, Mamata Mukhopadhyay and P.K. Watal, " Supercritical Direct Extraction of Neodymium Using TTSa and TBP", The Journal of Desalination, 2007-special issue
63. Tessy Vincent, P.K. Watal and Mamata Mukhopadhyay, "In-situ Direct supercritical fluid extraction of metal oxides using mixed ligands" The Journal of Separation Process Technology, 2007.
64. Mamata Mukhopadhyay and Bhatta Shankara Rao, "Modeling of Supercritical Drying of Ethanol-soaked Silica Aerogels with Carbon Dioxide" J Chem Technol Biotechnol, vol.83, Issue 8, 1101-1109, 2008.
65. Mamata Mukhopadhyay and Palash Panja, "Recovery of phytochemicals from kokum (Garcinia indica choisy) using pressurized hot water", , International Journal of Food Engineering: Vol. 4 : Issue 8, Article 13. 2008
66. Mamata Mukhopadhyay, Palash Panja, " A novel process for extraction of natural sweetener from licorice (Glycyrrhiza glabra) roots", Separation and Purification Technology, Volume 63, Issue 3, November 2008, p 539-545.
67. Mamata Mukhopadhyay, "Extraction and processing with supercritical fluids", Journal of Chemical Technology and Biotechnology, Volume: 84 Issue: 1 Pages: 6-12, Jan 2009
68. V. Bisaria, M. Mukhopadhyay., Journal of Chemical Technology and Biotechnology, Volume 83, Issue 8, p.1081 - 1082, (2008)
69. Tessy Vincent, P.K. Watal and Mamata Mukhopadhyay, "Direct in situ supercritical fluid extraction of neodymium ion from its oxide using thenoyl tri fluoro acetone-tri butyl phosphate-methanol in carbon dioxide",Jr. of Supercritical Fluids, Feb. 2009,
70. Sameer V. Dalvi and Mamata Mukhopadhyay, "A Novel Process for Precipitation of Ultra-fine Particles using Sub-critical CO₂" Journal of Powder Technology, 195, June, 2009, pages: 190-195
71. Sameer V. Dalvi and Mamata Mukhopadhyay, "Use of Sub-critical CO₂ for Production of Ultra-fine Particles by Pressure Reduction of Gas-Expanded Organic Liquids", Industrial & Engineering Chemistry Research June, 2009
72. Mamata Mukhopadhyay, Palash Panja, "Pressurized Hot Water as A Novel Extractant of Natural Products : A Review", Indian Chemical Engineer, October, 2009
73. R. Guha, M. Vinjamur, M. Mukhopadhyay, "Co-precipitation and encapsulation by supercritical anti-solvent process", Industrial & Engineering Chemistry Research, 50(2), 1079-1088, 2011
- 74.M.Vinjamur, M.Javed, and M.Mukhopadhyay, "Encapsulation of Nanoparticles using CO₂-Expanded Liquids, available on line to The Jr. Supercritical Fluids, March, 2013
- 75.K.Arjun Kumar, R.Chattaraj, M.Mukhopadhyay, M. Vinjamur, Sameer V. Dalvi, "Modeling of Precipitation of Ultra-fine Particles by Pressure Reduction Over CO₂- Expanded Liquids", available on line to the Jr. Supercritical Fluids, March, 2013

76. R. Suresh Kumar, M. Vinjamur, and M. Mukhopadhyay, "A Simple Process to Prepare Silica Aerogel Microparticles from Rice Husk Ash," *International Journal of Chemical Engineering and Applications* vol. 4, no. 5, pp. 321-325, 2013.
77. R. Suresh Kumar, D. Kumar, M. Vinjamur, M. Mukhopadhyay, "Silica Aerogel Microparticles from Rice Husk Ash for Drug Delivery", *Ind. Eng. Chem. Res.* 54(3), pp 949–956, 2015
78. Mriganka Mondal, Sandip Roy, Mamata Mukhopadhyay, "Engineering Micro/Nano Particles by PPRGEL Process Through Parametric Analysis" *Ind. Eng. Chem. Res.* March, 54 (3), pp 3451–3461, 2015
79. Suresh kumar Rajanna, Madhu Vinjamur, and Mamata Mukhopadhyay, "Mechanism for formation of Hollow and Granular Silica Aerogel Microspheres from rice husk ash for drug delivery", *Journal of Non-Crystalline Solids*, Volume 429, 1 December 2015, Pages 226–231
80. Shital D. Bachchhav, Sandip Roy, Mamata Mukhopadhyay, Parametric analysis of homogeneous and heterogeneous nucleation in subcritical CO₂-mediated antisolvent crystallization, *Chemical Engineering Research and Design*, Volume 106, February 2016, Pages 283–297
81. R. Suresh Kumar, M. Vinjamur, M. Mukhopadhyay, "Robust Silica Aerogel Microspheres from Rice Husk Ash to Enhance the Dissolution Rate of Poorly Water-Soluble Drugs", *Journal Chemical Engineering Communications* Volume 204, 2017, Issue 2, Pages 249-253
82. Mriganka Mondal, Sandip Roy, Mamata Mukhopadhyay, "Role of In-Situ Generated CO₂ Bubbles in Heterogeneous Nucleation of Solid Solutes in the Precipitation by Pressure Reduction of Gas-Expanded Liquid (PPRGEL) Process", *Ind. Eng. Chem. Res.*, 2017, 56 (33), pages 9331–9340
83. Shital D. Bachchhav, Sandip Roy, Mamata Mukhopadhyay, "Analysis of Effect of Solution Nonideality on Solute Supersaturation for Liquid Antisolvent Crystallization"(under publication)
84. Shital D. Bachchhav, Sandip Roy, Mamata Mukhopadhyay, "Analysis of Mechanism of Particle Formation by Anti-Solvent Crystallization of Cholesterol through Experiments and Process Modeling" (under publication)
85. Mriganka Mondal, Sandip Roy, Mamata Mukhopadhyay, ' CO₂ Gas Bubbles-Facilitated Particle Formation in Batch Cooling Crystallization: Experiments and Modeling (Under publication)
86. Neha Singh, Mamata Mukhopadhyay, and Madhu Vinjamur, "Analysis of Modes of Drug Loading in Silica Aerogels from Supercritical CO₂ Solutions," *The Journal of Supercritical Fluids*, 2019, Vol. 152, 104553
87. Neha Singh, Madhu Vinjamur, and Mamata Mukhopadhyay, "In Vitro Release Kinetics of Drugs from Silica Aerogels Loaded by Different Modes and Conditions using Supercritical CO₂" *The Journal of Supercritical Fluids*, 2020, (now available online), vol.170 (2021), 105142

B. In Proceedings of Conference and Seminars

1. Mamata Dutta, "The Effect of Molecular size and Thermodynamic Excess Functions", Proceedings of the 22nd Annual Convention of I.I.Ch.E., Jan. 1970.

2. M. Mukhopadhyay, R.C. Awasthi, "Computation of Multicomponent Vapour-Liquid Equilibria at High Pressure Using Equations of States", 32nd Annual IChE Convention Symposium, No.IVA-5, Dec. 1979.
3. M. Mukhopadhyay, "L-L-E Data Prediction Systems", Proceedings of Symposium on Applied Thermodynamics for Process Design, I.I.T., Bombay, 1983.
4. M. Mukhopadhyay and L. Sridharan, "Peng-Robinson Equation of State in the Design Calculations of Distillation Columns", Proceedings of the 37th Annual IChE Convention Symposium, Dec. 1984.
5. M. Mukhopadhyay and A.S. Pathak, "Generation of UNIFAC Group Contribution Parameters and L-L-E Data for Aromatics Extraction" Proceedings of the 37th Annual IChE Convention Symp., Dec. 1984.
6. M. Mukhopadhyay and Prabhakara Rao, "L-L-E Data for Six Component Aromatics Extraction System", Proceedings of the 38th Annual Convention of IChE, Dec., 1985.
7. M. Mukhopadhyay and B.D. Malleswara Rao, "Studies on Selectivity of Solvents for Extraction of C₇-C₁₀ Aromatics", Proceedings of the 39th Annual Convention of IChE., Dec. 1986.
8. V.S. Gangadhara Rao and M. Mukhopadhyay, "Influence of Binary Interaction Parameter on Prediction of Supercritical Fluid Phase Equilibrium Data", Proceedings of the 39th Annual Convention of IChE, Dec. 1986.
9. M. Mukhopadhyay and M. Sohoni, "Studies on Solvent Extraction for Recovery of Resorcinol", Proceedings of the 40th Annual Convention of I.I.Ch.E., Dec. 1987.
10. V. S. Gangadhara Rao and M. Mukhopadhyay, "Mass Transfer Studies for Supercritical Fluid Extraction of Spices", Proceedings of the International Symposium on Supercritical Fluids, Nice (France), Oct. 1988.
11. V .S. Gangadhara Rao and M. Mukhopadhyay, "Covolume dependent Mixing rule for the Prediction of Supercritical Fluid-Solid Equilibria", Proceedings of the International Symposium on Supercritical Fluids, Nice (France), Oct. 1988.
12. V.S. Gangadhara Rao and M. Mukhopadhyay, "Selective Separation of Cumin Seed Oil Constituents by Supercritical CO₂-extraction: Proceedings of the 41st Annual IChE Convention, 1988.
13. S.V.G.K. Sastry and M. Mukhopadhyay, "Recovery of Perfumery Chemicals from Flowers by Dense CO₂ Extraction", Proceedings of 42nd Annual IChE Convention, 1989.
14. M. Mukhopadhyay and Y.S.N. Malleswara Rao, "Solvency-Selectivity Behaviour of (TEG-NMP) Mixed Solvent for Aromatics Extraction", Proceedings of 42nd Annual IChE Convention, 1989.
15. M. Mukhopadhyay and V.S. Gangadhara Rao, "Supercritical Extraction of Pharmaceutical Chemicals", CHEA Seminar, IIT-Bombay.
16. M. Mukhopadhyay, S.V.G.K. Sastry, P. Srinivas, G.V.R. Rao, "Modeling Solute-Cosolvent Specific Interactions for SCFE of Fragrances"; Proceedings of the 2nd International Symposium on Supercritical Fluids, Boston, 463, May 1991.
17. S.V.G.K. Sastry, V. S.G. Rao and M. Mukhopadhyay, "Recent Developments in Coupled Supercritical Fluid Chromatography", Proceedings of the National Symposium and Workshop on HPLC and Separation Techniques, New Delhi, 1989.
18. P.Srinivas and M. Mukhopadhyay, "Oxidation of Cyclohexane in Supercritical Carbon dioxide Medium", Indian Chemical Engineering Congress, Dec. 1993.
19. S.V.G.K. Sastry and M. Mukhopadhyay, "Recovery of Floral Fragrance from Jasmine Flowers Using Supercritical Carbon dioxide" Chemical Engg. Congress, Dec. 1993.
20. P. Srinivas and M. Mukhopadhyay, "Supercritical Fluid-Liquid Equilibria of Binary and Ternary Mixtures of Cyclohexanone and Cyclohexanol with CO₂ and N₂", presented at the A.I.Ch.E. National Meeting held in Georgia, U.S.A., April, 1994.
21. S.V.G.K. Sastry and M. Mukhopadhyay, "Substrate Hindrance in Supercritical Extraction of Fragrances from Jasmine Flowers", Proceedings of the 3rd International Symposium on Supercritical Fluids, France, Oct., 1994.
22. S.V.G.K. Sastry and M. Mukhopadhyay, "Solubility Behaviour of Supercritically extracted Jasmine Fragrance and Its Constituents in Dense Carbon dioxide", Proceedings of the Asian Symposium on Supercritical Fluid Extraction Technology for Natural Products, New Delhi, March, 1994.
23. M. Mukhopadhyay, S. Roy, S. Baser, "On the cost effectiveness of Supercritical Extraction Plants", Proceedings of the Asian Symposium on Supercritical Fluid Extraction Technology for Natural Products, New Delhi, March, 1994.

24. M. Mukhopadhyay , S.V.G.K. Sastry, "Substrate Hindrance and Selective Recovery of Fragrances from Flowers using Supercritical CO₂", Proceedings of the Annual Convention of Association of Food Scientists and Technologies (INDIA), Sept. 1995.
25. M. Mukhopadhyay, R. Kumar, "A Parametric Study and Mass Transfer Modeling of Clove Oil Extraction Using SC CO₂" Proceedings of the Annual AIChE meeting in Miami, Nov. 1995.
26. M. Mukhopadhyay and R. Kumar, "Mass Transfer Modeling of Supercritical Extraction of Clove Oil", presented at the 7th International Symposium on SFC and SFE, March-April 1996, Indianapolis, USA.
27. Mukhopadhyay and S.V.G.K. Sastry, "Modeling Cosolvent-induced Solubilities using Solvent -Cluster interactions", Proceedings of 4th International Symposium on SCFs held in Japan, 1997.
28. M. Mukhopadhyay , S. Roy, and S. Baser, "SCFE- an Economic Analysis" presented at the XV National Conference on Recent Trends in Membrane Science & Technology, Calcutta, 20-22 November, 1997
29. M.Mukhopadhyay, S. Roy, and S. Baser, " On the Cost- Effectiveness of Supercritical Fluid Extraction Plants", Proceedings of the Asian Symposium on Supercritical Fluid Extraction Technology for Natural Products, New Delhi, 27-29 Sept., 1994
30. S. Baser, M. Mukhopadhyay ,and S. Roy, " Development of Supercritical Fluid Extraction at IIT-Bombay and Economic Feasibility Studies", Proceedings of 3rd PAFAI Seminar on the Opportunities for Perfumes and Flavour Industry, Aurangabad, 19-20 Jan, 1997
31. M.Mukhopadhyay, "Purification of Phytochemicals By Selective Crystallization Using Dense Carbon Dioxide as Antisolvent", Proceedings of the 10th International Symposium on Supercritical Fluid Chromatography, Extraction & Processing, Myrtle Beach, South Carolina, USA, August 19-22, 2001
32. M.Mukhopadhyay, Purification of Lecithin by Selective Crystallization Using Carbon Dioxide as Antisolvent, Departmental Seminar at University of Auburn, August 24, 2001
33. M. Mukhopadhyay, " Thermodynamic Analysis of Gas Antisolvent Crystallization for Purification ", Departmental Seminar at University of Houston, August 29, 2001
34. M. Mukhopadhyay and C.R.Patel, "Gas Antisolvent Crystallisation at Ambient Temperature for Enrichment of Phytochemicals", the Proc. of the International Seminar and Workshop on Advanced Separation Processes(2002), IIT-Kharagpur, India
35. M.Mukhopadhyay, "Supercritical Fluid Technology-A Viewpoint", Plenary lecture at the International Seminar and Workshop on Advanced Separation Processes (2002), IIT-Kharagpur, India
36. M. Mukhopadhyay, S.V. Dalvi, "Solid Solubility Prediction From Partial Molar Volume Fraction of Solvent in Antisolvent-Solvent Mixture".In Proc.Super Green-2002, 1st Intl. Symp. On Supercritical Fluid Technology for Energy and Environmental Applications, Nov. 3-6(2002), Suwon, Korea
37. M.Mukhopadhyay and S.V. Dalvi, "A New Thermodynamic Method for Solid-Liquid -Vapor Equilibrium in Ternary Systems from Binary Data for Antisolvent Crystallization" in the Proc. of the 6th International Symposium on Supercritical Fluids, Versailles, France, April 2003
38. Tessa Vincent, P.K.Wattal, and Mamata Mukhopadhyay, " In-situ chelation and extraction of heavy metal oxides using modified supercritical carbon dioxide", in the Proc. of Chem-Con , I.I.Ch.E. Convention, 2003
39. M.Mukhopadhyay and S.V. Dalvi, "Prediction of Supersaturation Behaviour in Supercritical Antisolvent Crystallisation from PMVF of solvent in binary (CO₂-solvent) mixture", in the Proc. of Chem-Con , I.I.Ch.E. Convention, 2003
40. Mamata Mukhopadhyay and S. V. Dalvi, : "Process Modeling and Analysis of Supercritical Antisolvent Crystallization Technique for Formation of Nanoparticles", in the Proc. of the In-House Symposium on Nanotechnology @ IITB, September 13, 2003
41. Mamata Mukhopadhyay, "Supercritical Fluid Extraction of Herbal Medicines and Nutraceuticals" in Emerging Trends in Herbal Technology, in the Proc. of the All-India Seminar by Institution of Engineers (India), WBSC, Kolkata , Nov 28-29, 2003
42. M.Mukhopadhyay, "Recovery of Nutraceuticals and Herbal Medicines by Supercritical Fluid Extraction", in the Proc. of the Indian Chemical Industries Association , Chennai, Feb. 2004
43. M.Mukhopadhyay, "Supercritical Fluid Extraction of Nutraceuticals and Metal Ions", the Proceedings of SESTEC-2004, organised by DAE and BRNS at B.A.R.C., Mumbai on July 22-23, 2004

44. M.Mukhopadhyay, Sameer V.Dalvi, "Effects of Thermodynamic States of Flowing Carbon Dioxide on Supersaturation within a Moving Droplet for Supercritical Antisolvent Crystallization", in the Proc. of the 11th Intl. Symp. on SFE, SFC and SFP, Pittsburgh, August 1-4, 2004
45. M.Mukhopadhyay, Anuradha Chakrabarty, "Sterilization and Stabilization of Food Products with Supercritical Carbon Dioxide at Moderate Conditions", in the Proc. of the 11th Intl. Symp. on SFE, SFC and SFP, Pittsburgh, August 1-4, 2004
46. M.Mukhopadhyay, "Supercritical Fluid Extraction of Nutraceuticals and Production of Pharmaceutical Nanoparticles", Plenary Lecture at the Indian Pharmaceutical Congress 2004, Kolkata Dec. 4, 2004
47. B.Sankara Rao, M.Mukhopadhyay, "Mathematical Modeling of Supercritical Drying of Aerogels with Carbon Dioxide", US-India Technical Session at Chemcon-2004 organised jointly by AIChE and IChE in Mumbai on 27-30 December 2004
48. Sameer V.Dalvi, M.Mukhopadhyay, "Modeling of Supersaturation for Depressurization of (CO₂)-Expanded Liquid Organic Solution (DELLOS) Process for Formation of Nanoparticles", US-India Technical Session at Chemcon-2004 organised by AIChE and IChE in Mumbai on 30 Dec. 2004
49. M.Mukhopadhyay, Sameer V. Dalvi, "A Novel Process for Production of Pharmaceutical Nanoparticles using Subcritical Carbon Dioxide", in the Proc. of FAN-IITB Nanotechnology Workshop at IIT Bombay, 6-8 January, 2005
50. M.Mukhopadhyay, "Supercritical Fluid Extraction Technology for Herbal Medicines and Health Care Products" Invited Plenary lecture presented at the 37th Annual Conference of the Indian Pharmacological Society held in Science City, Kolkata, on January 14, 2005.
51. M. Mukhopadhyay, "Supercritical Carbon Dioxide Technology for Production of Nanoparticles", Invited Plenary Lecture presented at the National Seminar on Nanotechnology: Present Status and Future Prospects, 15-16 January, 2005, in Science College, University of Calcutta
52. M.Mukhopadhyay, "Production of Pharmaceutical Nanoparticles using Supercritical Carbon Dioxide, National Conference on Nanoscience and Technology, Jadavpur University, January 21, 2005
53. M. Mukhopadhyay, "Supercritical Fluid Extraction Technology for Botanical Health Care Products and Herbal Medicines", invited Plenary lecture at National Seminar : Botanical Products in New Millenium-Developments and Challenges, 5-7 February, 2005, Jaipur, Rajasthan University.
54. M.Mukhopadhyay, Anuradha Chakraborty, "Preserving Goodness of Aloe Vera Using Supercritical Carbon Dioxide", at the National Seminar : Botanical Products in New Millenium-Developments and Challenges, 5-7 February, 2005, Jaipur , University of Rajashtan
55. M. Mukhopadhyay, Hiren Karmata, "A New Process For Nutraceuticals Enriched With Carotenoids Using Supercritical Carbon Dioxide", International Conference on Promotion & Development of Botanicals with International Coordination: Exploring Quality, Safety & Regulations Feb.25-26, 2005.
56. Sameer V.Dalvi, M.Mukhopadhyay, "A New Process for Production of Ultra-fine Particles using Subcritical Carbon Dioxide", accepted for oral presentation in ISSF-2005, the 7th International Symposium on Supercritical Fluids on May 5, 2005, Florida, U.S.A.
57. B.Sankara Rao, M.Mukhopadhyay, "Mass transfer Modeling of Drying of Aerogels with Supercritical Carbon Dioxide", accepted for poster presentation in ISSF-2005, the 7th International Symposium on Supercritical Fluids on May 5, 2005, Florida, U.S.A.
58. M.Mukhopadhyay, "Supercritical Fluid Technology for Extraction of Metal Ions Using Carbon Dioxide", An invited lecture at the Indira Gandhi Centre for Atomic Research (IGCAR), the Department of Atomic Energy at Kalpakkam on April 19, 2005.
59. M.Mukhopadhyay, Anuradha Chakrabarty, Invited Poster presentation on "Novel Processes for Preservation of Fruit Juices, Vegetables and Food products Using Supercritical Carbon Dioxide", in the National Consultative Meet on Fruit & Vegetable Processing, 7 Dec.. 2005, NABARD, Mumbai
60. M.Mukhopadhyay, "Recent Innovative Processes Utilizing Unique Thermophysical and Biological Properties of Carbon Dioxide" invited talk at ChemCon-2005, New Delhi, on Dec . 14-17. 2005
61. Tessy Vincent, M.Mukhopadhyay and P.K. Watal, "Direct Reactive Extraction of Metal Oxides in Modified supercritical Carbon Dioxide" in the Proceedings. ChemCon-2005, New Delhi, Dec14-17,200

62. Tessy Vincent, P.K. Wattal and Mamata Mukhopadhyay, “*Solubility Behaviour of Lanthanide Chelates in Supercritical Carbon Dioxide*” in the proceedings of Theme meeting on Emerging Trends in Separation Science and Technology SESTEC-2004), BARC, Mumbai, INDIA, September 2004.
63. Tessy Vincent, P.K. Wattal and Mamata Mukhopadhyay, “*Extraction of Rare-Earths Using Ligand Assisted Supercritical Carbon Dioxide*” in the proceedings of NUCAR-2005, Guru Nanak Dev University, Amritsar, Punjab, INDIA, March.
64. Tessy Vincent and Mamata Mukhopadhyay “*Novel Separation Methods by Supercritical Fluids*”, during Indo-French Bi lateral seminar on Nuclear Waste Management, BARC, INDIA, December 2005.
65. Tessy Vincent, P.K. Wattal and Mamata Mukhopadhyay, “*Reactive Extraction of Lanthanides Using Supercritical Carbon Dioxide Assisted with Beta-Diketone Ligand: A Study on Mechanism*”, in the proceedings of CHEMCON-2005, IIT, Delhi, INDIA, December 2005.
66. Tessy Vincent, P.K. Wattal and Mamata Mukhopadhyay, “*Supercritical Direct Extraction of Neodymium using TTA and TBP*”, in the proceedings of SESTEC-2006, BARC, Mumbai, INDIA, September 2006.
67. Mamata Mukhopadhyay and Palash Panja, “A Novel Extraction Method for Recovering Phytochemicals from Natural Materials” in the Proceedings of Chemcon2007, Kolkata, organised by IChE, December 2007
68. Vinjamur M, Javed M, and Mukhopadhyay, M., “Encapsulation of Nanoparticles by Pressure Reduction over CO₂-Expanded Liquids”, 10th International Society for Supercritical Fluids, San Francisco, May 13-15, 2012
69. K.Arjun Kumar, M. Vinjamur, Sameer V. Dalvi, M.Mukhopadhyay, “Precipitation of Ultra-fine Particles by Pressure Reduction of Gas expanded Liquids: Experiments and Modeling”, 10th International Society for Supercritical Fluids, San Francisco, May 13-15, 2012
70. Shital D. Bachchhav, Sandip Roy, Mamata Mukhopadhyay, “Tailoring of Subcritical CO₂ Gas-Expanded Liquid Solutions for Producing Micro/Nano-particles”, Proceedings of CHEMCON 2013, 66th Annual Session organized by IChE and AIChE in Mumbai, 27-30 Dec., 2013
71. R. Suresh Kumar, M. Vinjamur, and M. Mukhopadhyay, "A Simple Process to Prepare Silica Aerogel Microparticles from Rice Husk Ash," *International Conference on Chemical Engineering and Applications 2013 (CCEA 2013)*, Paris, France 2013
72. Shital D. Bachchhav, Sandip Roy, and Mamata Mukhopadhyay. “Effect of Process Parameters on the Crystallization of Cholesterol Particles Using Liquid Antisolvent Process,” *20th International Symposium on Industrial Crystallisation 2016*, September 3-6, 2017, Dublin Ireland
73. Mriganko Mandal, Sandip Roy, and Mamata Mukhopadhyay. “Effect of Gas Bubbles on heterogeneous Nucleation of Solid Solute” *20th International Symposium on Industrial Crystallisation 2016*, September 3-6, 2017, Dublin Ireland
74. Shital D. Bachchhav, Sandip Roy, and Mamata Mukhopadhyay, “Analysis of Thermodynamic Non-Ideality in Computation of Supersaturation in Liquid Antisolvent Precipitation” *24th International Workshop on Industrial Crystallization 2017* August 29-31, 2017, TU Dortmund University, Germany
75. Neha Singh, Madhu Vinjamur, and Mamata Mukhopadhyay “Modelling of Drug Precipitation in Aerogels from solution in Supercritical CO₂” *20th International Symposium on Industrial Crystallisation 2016*, September 3-6, 2017, Dublin Ireland