

LIST OF PUBLICATIONS FOR

June 2009-July 2010

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Last Edited: July 20, 2010

1. Publications in refereed journals

Transport Processes in Fuel Cells and Lithium ion Battery

- Sasmito, A. P., Lum, K. W., Birgersson, E., Mujumdar, A. S. Computational study of forced-air convection in an open-cathode polymer electrolyte fuel cells stack. *J. Power Sources* **2010**, 195(17), 5550-5563.
- Sasmito, A. P., Birgersson, E., Mujumdar, A. S. Numerical Investigation of Liquid Water Cooling for a Proton Exchange Membrane Fuel Cell Stack, *Heat Transfer Engineering* **2011**, 32 (2), in press.

Drying

- Yu, G.-H., He, P.-J., Shao, L.-M., Lee, D.-J., Mujumdar, A.S. Extracellular polymeric substances (EPS) and extracellular enzymes in aerobic granules, *Drying Technology* **2010**, 28(7), 910-915.
- Hsu, J.-P., Tao, T., Su, A., Mujumdar, A.S., Lee, D.-J. Model for sludge cake drying accounting for developing cracks, *Drying Technology* **2010**, 28(7), 922-926.
- Yan, W., Zhang, M., Huang, L.-L., Tang, J., Mujumdar, A.S., Sun, J.-C. Study of the optimization of puffing characteristics of potato cubes by spouted bed drying enhanced with microwave, *Journal of the Science of Food and Agriculture* **2010**, 90(8), 1300-1307.
- Pang, S., Mujumdar, A.S. Drying of woody biomass for bioenergy: Drying technologies and optimization for an integrated bioenergy plant, *Drying Technology* **2010**, 28 (5), 690-701.
- Wang, R., Zhang, M., Mujumdar, A.S. Effect of osmotic dehydration on microwave freeze-drying characteristics and quality of potato chips, *Drying Technology* **2010**, 28 (6), 798-806.
- Wang, R., Zhang, M., Mujumdar, A.S. Effect of food ingredient on microwave freeze drying of instant vegetable soup, *LWT - Food Science and Technology* **2010**, Article in Press.
- Wu, G.-C., Zhang, M., Mujumdar, A.S., Wang, R. Effect of calcium ion and microwave power on structural and quality changes in drying of apple slices, *Drying Technology* **2010**, 28 (4), 517-522.
- Woo, M.W., Mujumdar, A.S. Effects of electric and magnetic field on freezing and possible relevance in freeze drying, *Drying Technology* **2010**, 28 (4), 433-443.

- Zhang, C.H., Huang, L.X., Wang, C.P., Mujumdar, A.S. Experimental and numerical investigation of spray-drying parameters on the dried powder properties of ginkgo biloba seeds, *Drying Technology* **2010**, 28 (3), 380-388.
- Woo, M.W., Daud, W.R.W., Mujumdar, A.S., Tasirin, S.M., Talib, M.Z.M. Role of rheological characteristics in amorphous food particle-wall collisions in spray drying. *Powder Technology* **2010**, 198(2), 251-257.
- Mujumdar, A.S., Huang, L.-X., Chen, X.D. An overview of the recent advances in spray-drying, *Dairy Science and Technology* **2010**, 90 (2-3), 211-224.
- Gong, Z., Gao, L., An, J., Zhang, M., Mujumdar, A.S., Sun, J. Effects of predrying and vacuum impregnation with Nano-calcium carbonate solution on strawberries, carrots, corn, and blueberries, *Drying Technology* **2010**, 28 (1), 36-41.
- Gong, Z.-X., Mujumdar, A.S. Simulation of drying nonaqueous systems-an application of simprosys software, *Drying Technology* **2010**, 28 (1), 111-115.
- Duan, X., Zhang, M., Mujumdar, A.S. and Wang, S. Microwave freeze drying of sea cucumber (*Stichopus japonicus*), *Journal of Food Engineering* **2010**, 96 (4), 491-497.
- Law, C.L., Mujumdar, A.S. Drying technology: Trends and applications in postharvest processing. *Food and Bioprocess Technologies* **2010**, in press, 1-10.
- Fernandes, F.A.N., Rodrigues, S., Law, C.L., Mujumdar, A. S. Drying of exotic tropical fruits: A comprehensive review, *Food and Bioprocess Technologies* **2010**, in press, 1-23.
- Woo, M.W., Daud, W.R.W., Mujumdar, A.S., Wu, Z.-H., Talib, M.Z.M., Tasirin, S.M. CFD evaluation of droplet drying models in a spray dryer fitted with a rotary atomizer, *Drying Technology* **2009**, 26 (10), 1180-1198.
- Chin, S.K., Law, C.L., Supramaniam, C.V., Cheng, P.G., Mujumdar, A.S. Convective drying of *Ganoderma tsugae* Murrill and effect of temperature on basidiospores, *Drying Technology* **2009**, 26 (12), 1524-1533.
- Song, X. J., Zhang, M., Mujumdar, A.S., Fan, L. Drying characteristics and kinetics of vacuum microwave-dried potato slices, *Drying Technology* **2009**, 27(9), 969-974.
- Jangam, S.V., Mujumdar, A.S., Thorat, B. N. Design of an Efficient Gas Distribution System for a Fluidized Bed Dryer, *Drying Technology* **2009**, 27(11), 1217 – 1228.

- Huang, L., Zhang, M.; Mujumdar, A.S.; Sun, D.F., Tan, G.W., Tang, S. Studies on Decreasing Energy Consumption for a Freeze-Drying Process of Apple Slices, *Drying Technology* **2009**, 27(9), 938 – 946.
- Wang, R., Zhang, M., Mujumdar, A.S., Sun, J. Microwave Freeze-Drying Characteristics and Sensory Quality of Instant Vegetable Soup, *Drying Technology* **2009**, 27(9), 962 - 968.
- Piacentini, R.D., Mujumdar, A.S. Climate Change and Drying of Agricultural Products, *Drying Technology* **2009**, 27(5), 629 – 635.

Nonthermal Dewatering

- Cheng, Y.-L., Wong, R.-J., Lin, J.C.-T., Huang, C., Lee, D.-J., Mujumdar, A.S. Water coagulation using electrostatic patch coagulation (EPC) mechanism, *Drying Technology* **2010**, 28(7), 850-857.
- Hsu, J.-P., Su, A., Mujumdar, A.S., Lee, D.-J. Unified analysis of dewatering and drying of sludge cake, *Drying Technology* **2010**, 28 (7), 877-880.

Coal Technologies

- Wu, Z.H., Hu, Y.J., Lee, D.J., Mujumdar, A.S., Li, Z.Y. Dewatering and drying in mineral processing industry: Potential for innovation, *Drying Technology* **2010**, 28(7), 834-842.
- Jangam, S.V., Karthikeyan, M., Mujumdar, A.S. A critical assessment of industrial coal drying technologies: Role of energy, emissions, risk and sustainability, *Drying Technology* **2010**, Accepted for publication.

Others

- Xu, P., Mujumdar, A.S., Poh, H.J., Yu, B. Heat transfer under a pulsed slot turbulent impinging jet at large temperature differences, *Thermal Science* **2010**, 14 (1), 271-281.
- Xu, P., Yu, B., Qiu, S., Poh, H.J., Mujumdar, A.S. Turbulent impinging jet heat transfer enhancement due to intermittent pulsation, *International Journal of Thermal Sciences* **2010**, in Press.
- Wang, X. Q., Xu, P., Mujumdar, A.S., Yap, C. Flow and thermal characteristics of offset branching network, *International Journal of Thermal Sciences* **2010**, 49(2), 272-280.
- Li, Z., Su, W., Wu, Z., Wang, R., Mujumdar, A.S. Investigation of flow behaviors and bubble characteristics of a pulse fluidized bed via CFD modeling, *Drying Technology* **2010**, 28 (1), 78-93.

- Rahman, S.M.A., Mujumdar, A.S. Aerodynamic and thermal characteristics of a maxwell type vortex tube. International Journal of Thermal science, Submitted for publication.
- Wang, X.Q., Peng X., Mujumdar, A.S., Yap, C. Flow and thermal characteristics of offset branching network, International Journal of Thermal Science, **2010**, 49(2), 272-280.
- Kurnia, J.C., Sasmito, A.P., Mujumdar, A.S. Evaluation of heat transfer performance of helical coils of non-circular tubes, Submitted for publication in Journal of Zhejiang University-SCIENCE A.
- Kurnia, J.C., Sasmito, A.P., Mujumdar, A.S. Laminar convective heat transfer in coils of noncircular cross-sections tubes: a computational fluid dynamics study, Submitted for publication in Journal of Thermal Science.
- Kurnia, J.C., Birgersson, E., Mujumdar, A.S., Quah, L.C. Mathematical modeling of hydrogels for microfluidic flow control, Advanced Material Research **2009**, 74, 33-36.
- Kandasamy, R., Mujumdar, A.S. Interface thermal characteristics of flip chip packages-A numerical study, Applied Thermal Engineering **2009**, 29 (5-6), 822-829.

2. Conference publications (partial list)

2010

- Kurnia, J.C., Birgersson, E., Mujumdar, A.S. Analysis of Polyelectrolyte Temperature Sensitive Hydrogels, Regional Conference on Mechanical and Aerospace Technology 2010 Bali, Indonesia.
- Sasmito, A.P., Birgersson, E., Mujumdar, A.S. Computational study of Flow reversal for Improved Thermal Management in a PEMFC Stack with Forced Air Convection Cooling. ASME 14th International Heat Transfer Conference, p. 22787, Washington D. C., United States of America, 2010. (submitted).
- A. P. Sasmito, E. Birgersson, K. W. Lum, A. S. Mujumdar. Numerical Study of Natural Convection Air Cooling of a Polymer Electrolyte Fuel Cell: Single Cell and Stack, Regional Conference on Mechanical and Aerospace Technology, p. 114, Bali, Indonesia, 2010.
- Ong, M.J.Y., Jangam, S.V., Mujumdar, A.S., Gong, Z.X. Improving energy efficiency and sustainability of industrial thermal drying systems using simprosys software, International Symposium on Innovative Materials for Processes in Energy Systems, Singapore, 2010.

- Jangam, S.V., Mujumdar, A.S. Making upgrading of low rank coals by thermal dehydration more sustainable - proposed alternative scenarios, The 3rd Sriwijaya International Seminar on Energy Science and Technology (SISEST 2010), Indonesia, 2010.
- Jangam, S.V., Kuma, J. M., Mujumdar, A.S. A critical assessment of industrial coal drying technologies, International Drying Symposium (IDS), Germany, 2010.
- Somasundaram, K., Birgersson, E., Mujumdar, A.S. A Coupled Thermal-Electrochemical Reduced Model of a Lithium-Ion Battery, International Conference on Applied Energy, Singapore, p294-303, April 21-23, 2010.
- Somasundaram, K., Birgersson, E., Mujumdar, A.S. Automated Code Generation for a Lithium-Ion Battery Stack Model, International Conference on Applied Energy, Singapore, p304-312, April 21-23, 2010.
- Mujumdar, A.S. Some strategies for drying of high moisture coals, Keynote lecture at The 3rd Sriwijaya International Seminar on Energy Science and Technology (SISEST 2010), Indonesia, 2010.
- Kurnia, J.C., Sasmito, A.P., Mujumdar, A.S. Evaluation of heat transfer performance of helical coils of non-circular tubes, International Symposium on Innovative Materials for Processes in Energy System 2010, submitted.
- Kurnia, J.C., Sasmito, A.P., Mujumdar, A.S. Convective heat transfer in coils of non-circular cross-sections: CFD study of laminar heat transfer enhancement relative to straight pipes, Sriwijaya International Seminar on Energy Science and Technology 2010, submitted.

2009

- Mujumdar, A.S. and C.L. Law, Drying Technology: Trends and Applications in Postharvest Processing, 5th International Technical Symposium on Food Processing, Monitoring Technology in Bioprocesses and Food Quality Management, Aug 31st - Sept 2nd, 2009, Potsdam, Germany.
- Fazle Mahbub, M N A Hawlader and A S Mujumdar, Exergoeconomic Analysis of a Combined Water and Power Plant (CWPP): Endeavor towards enhanced efficiency, EDS Conference and Exhibition on Desalination for the Environment 17-20 May 2009, Kongresshaus, Baden-Baden, Germany.
- Law, C.L. and A.S. Mujumdar, Energy issues in industrial drying, Keynote Lecture, SISST2009 Conf., Palembang, Indonesia, Oct.14-15,2009.
- Fazle Mahbub, M N A Hawlader and A. S. Mujumdar , Exergoeconomic Analyses of a Combined Water and Power Plant (CWPP), ASME 3rd International Conference on Energy Sustainability ES2009 19-23 JULY, 2009, San Francisco, CA, USA.
- Peng Xu, A. Mujumdar and Mita Ray, Design and optimize hydrocyclone with mathematical modeling, 4th Inter-American Drying Conference in conjunction

with 8th World Congress of Chemical Engineering, Montreal, Canada, August 23-27, 2009.

- Peng Xu, Hee Joo Poh, A.S. Mujumdar and B. Yu, Heat transfer under a round pulsed turbulent impinging jet at large temperature differences-A computational analysis, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009 .
- A.S. Mujumdar, International Drying Conferences: Past Performance, Present Status and Future Prospects, Fourth Nordic Drying Conference, Reykjavik, Iceland, 17-19 Jun 2009.
- Peng Xu, Hee Joo Poh, A.S. Mujumdar and Boming Yu, Some modeling studies on pulsed turbulent impinging jet heat transfer, Fourth Nordic Drying Conference, Reykjavik, Iceland, 17-19 Jun 2009.
- M.W. Woo, W.R.W. Daud, A.S. Mujumdar, Z.H. Wu, M.Z.M. Talib, S.M. Tasirin, Some Perspectives on Droplet Drying Models in Spray Drying, Fourth Nordic Drying Conference, Reykjavik, Iceland, 17-19 Jun 2009.
- S.M.A. Rahman and A.S. Mujumdar, A Vortex Tube Assisted Atmospheric Freeze Drying System Using Multimode Heat Input, Fourth Nordic Drying Conference, Reykjavik, Iceland, 17-19 Jun 2009.
- X. Duan, M. Zhang, A.S. Mujumdar, R. Wang, Trends in Microwave - Assisted Freeze Drying of Foods, Fourth Nordic Drying Conference, Reykjavik, Iceland, 17-19 Jun 2009.
- Peng Xu, Hee Joo Poh, A.S. Mujumdar and B. Yu, Pulsed turbulent impinging jets: CFD study of flow and heat transfer characteristics, 20th National and 9th ISHMT-ASME Heat and Mass Transfer Conference, Mumbai, India, 4-6 Jan 2010.
- WU, Z.H. and A S Mujumdar, Modeling of post combustion in an electric arc furnace for advanced steelmaking. the 7th Asia Pacific Conference on Sustainable Energy and Environmental Technologies , Oct 15-17, 2009, Blue Horizon Marina Gold Hotel, Qingdao, China
- WU, Z and A S Mujumdar, Pulse Combustion: An Energy Efficient Combustion Technology with Potential Applications. the 7th Asia Pacific Conference on Sustainable Energy and Environmental Technologies Oct 15-17, 2009, Blue Horizon Marina Gold Hotel, Qingdao, China
- Mujumdar, A S and Z WU, Green Drying Technologies- A Case for Application of Integrated Renewable Energy Sources. the 7th Asia Pacific Conference on Sustainable Energy and Environmental Technologies, Oct 15-17, 2009, Blue Horizon Marina Gold Hotel, Qingdao, China

- Wu, Z and A S Mujumdar, Vortex forming Mechanisms in the Tundish. International Conference on Advances in Theory of Ironmaking and Steelmaking, Dec 9 - 11, 2009, Bangalore, India
- Wu, Z and A S Mujumdar, Exploration of Some New Tundish Designs via Simulation. International Conference on Advances in Theory of Ironmaking and Steelmaking, Dec 9 - 11, 2009, Bangalore, India
- Wu, Z.H., Mujumdar, A.S. , Some Exploratory modeling results on superheated steam fluid bed drying of coal powder, 12th Polish Drying Symposium, Poland/ Lodz., Sep 12-14, 2009
- Wu, Z.H., Mujumdar, A.S. , Role of modeling in development of drying technologies, 12th Polish Drying Symposium, Poland/ Lodz., Sep 12-14, 2009.
- Huang, L.X., Wang, C.P., Zhou, R.J., Mujumdar, A.S. Spray Droplet Size Distribution using a Spinning Disk Atomizer, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.
- Woo, M.W., Daud, W.R.W., Mujumdar, A.S., Wu, Z.H., Talib, M.Z.M., Tasirin, S.M. Flow Stability in Short Form Spray Dryers, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.
- Rahman, S.M.A., Mujumdar, A.S. Drying at Subzero Temperature with Vortex Tube and Different Modes of Heat Input-A New Alternative for High Quality Food Products, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.
- Huang, L.X., Liao, C.H., Wang, C.Z., Fang, X., Zhang, C.H., Mujumdar, A.S. Experimental Investigation of Supercritical Fluid Drying of Ginkgo Biloba Leave Extracts, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.
- Piacentini, R.D., Mujumdar, A.S. Climate Change and Improvement of Industrial Drying Operations. The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.
- Zhang, C.H., Huang, L.X., Mujumdar, A.S. Prediction of the Spray-Dried Properties of Ginkgo Biloba Seeds, The 6th Asia-Pacific Drying Conference, Bangkok, Thailand, 19-21 Oct 2009.

3. Authored/Edited books and proceedings volumes

- **Mujumdar, A.S.** Perspectives on Innovation, Globalization and R&D by Arun S. Mujumdar, published in 2010, ISBN: 978-981-08-5757-8, Place of publication: Singapore, Ed. S. Jangam.
- Jangam, S.V., Law, C.L., **Mujumdar, A.S.** Drying of Food, Vegetables and Fruits, Ready for publication.

- Woo, M.W., **Mujumdar, A.S.**, Daud, W.R.W. Spray Drying Technology, published in 2010, ISBN: 978-981-08-6270-1, Place of publication: Singapore.
- Kandasamy, R., **Mujumdar, A.S.** Thermal Management of Electronic Components-Phase change material based hybrid thermal management of electronic components and systems, 2010, ISBN: 978-3-8383-6087-4, Publisher: Lambert Academic Publishing, Germany.
- Woo, M.W., **Mujumdar, A.S.**, Daud, W.R.W. Spray drying: Operation, Deposition and CFD simulations, 2010, ISBN: 978-3-639-23149-6, Publisher: VDM Publishing House, Germany.
- Poh, H.J., **Mujumdar, A.S.** Mass transport enhancement in proton exchange membrane fuel cell, 2010, ISBN: 978-3-8383-0165-5, Publisher: Lambert Academic Publishing, Germany.
- Wang, X., **Mujumdar, A.S.**, Yap, C. Novel techniques for electronics cooling, (book publication of PhD thesis – finalized and published in **2010**).
- Wu, Z., **Mujumdar, A.S.** Mathematical modeling of pulse, 2010, ISBN: 978-3-8383-2707-5, Publisher: Lambert Academic Publishing, Germany.
- Rahman, S.M.A., **Mujumdar, A.S.** A novel approach on atmospheric freeze drying, 2010, ISBN: 978-3-8383-1605-5, Publisher: Lambert Academic Publishing, Germany.

4. Authored Book chapters

- Huang, L. X., Mujumdar, A.S. Spray Drying and Its application in Food Processing **Ch 9** in Innovation in Food Engineering, Ed. Passos, M.L., Ribeiro, C.P., CRC press - US, 2009
- Fan, L.P, Zhang, M., Mujumdar, A.S. Vacuum Frying Technology **ch. 13** in Innovation in Food Engineering, Ed. Passos, M.L., Ribeiro, C.P., CRC press - US, 2009
- A.P. Sasmito, E. Birgersson, A. S. Mujumdar, Mathematical Modeling of PEM Fuel Cell Stacks: Thermal Management, book chapter in: Mathematical Modeling of Industrial Transport Processes, edited by P. Xu, Z. Wu and A. S. Mujumdar, TPR group, Singapore, **2009**.
- J.C. Kurnia, E. Birgersson, and A.S. Mujumdar, 2009, Heat and mass transfer in gels, in Mathematical Modeling of Industrial Transfer Process. Xu Peng, Wu Zhonghua, A. S. Mujumdar., pp. 57-68. (available online: <http://serve.me.nus.edu.sg/arun/>)

5. Keynote Lectures

- Principal lecturer, 4th International Workshop on Crystallization, Filtration and Drying, Mumbai, India, February 2010.
- Plenary lecture, 6th Asia Pacific Drying Conference (ADC2009), Bangkok, Thailand, November 2009.
- Plenary lecture at XII Polish Drying Symposium (PDS2010), Lodz, Poland, September 2009.
- Plenary Lecture at CIGR Section VI International Symposium on Food Processing, Monitoring Technology in Bioprocesses and Food Quality Management, Potsdam, Germany, August 2009.
- Keynote lecture at International conference on issues and challenges in energy conversion and management, Energy Savings in Industrial Drying Operations, December 18-20, 2009.