

May 2009

Prof. Min Zhang and his colleagues of Jiangnan University, Food Science Department, Wuxi, China, have been active research collaborators of the TPR Group led by Prof. Mujumdar of NUS Mechanical Engineering Department. The focus has been on drying of various foods ranging from marine products to vegetables to fruits. Various drying technologies have been explored successfully mainly via extensive experimentation. A large number of co-advised PhD students have completed their theses at Jiangnan under joint supervision. A large number of archival journal papers have also been published.

Prof. Mujumdar visited Jiangnan University in Wuxi April 27=30, 2009. He presented a 2 hour seminar on recent developments in food drying. Postgraduate students at Jiangnan presented in detail their recent research results on freeze and MW freeze drying of vegetables and fruits. Following is a list of the outcome of the successful and productive collaboration which has been going on continuously over the past seven years. Pepsico R&D, USA, is providing support for some of the research activities now in progress. A Jiangnan-Pepsico Institute has been formed which we expect will lead to contributions to both basic and applied R&D in drying using MW at cryogenic conditions.

#### ● Co-supervised PhDs

1. Xu YY, 2004 defended, supervised by Zhang M, **Mujumdar AS**
2. Fan LP, 2005 defended, supervised by Zhang M, **Mujumdar AS**
3. Hu QG, 2006 defended, supervised by Zhang M, **Mujumdar AS**
4. Cao H, 2007 defended, supervised by Zhang M, **Mujumdar AS**
5. Song XJ, 2008 defended, supervised by Zhang M, **Mujumdar AS**
6. Gong ZQ, 2008 defended, supervised by Zhang M, **Mujumdar AS**
7. Duan X, 2009 defended, supervised by Zhang M, **Mujumdar AS**
8. Wang R, studied, supervised by Zhang M, **Mujumdar AS**
9. Huang LL, studied, supervised by Zhang M, **Mujumdar AS**
10. Yan WQ, studied, supervised by Zhang M, **Mujumdar AS**
11. Jiang H, studied, supervised by Zhang M, **Mujumdar AS**
12. NAHIMANA, studied, supervised by Zhang M, **Mujumdar AS**

#### ● Publications together

1. Xu YY, Zhang M\*, **Mujumdar AS**, et al., Studies on hot air and microwave vacuum drying of wild cabbage, *Drying Technology* 22 (9): 2201-2209 2004 (IF1.171);
2. Fan LP, Zhang M\*, Mujumdar AS, Vacuum frying of carrot chips, *Drying Technology* 23 (3): 645-656, 2005 (IF1.171);
3. Hui CAO, Min ZHANG\*, Arun S. MUJUMDAR, Wei-hua DU and Jin-cai SUN, Optimization of osmotic dehydration of kiwifruit, *Drying Technology*, 24(1), 89-94,2006(IF1.171);
4. M. Zhang\*, J. Tang, A.S. Mujumdar, S. Wang, Trends in microwave-related drying of fruits and vegetables, *Trends in Food Science & Technology*, Trends in Food Science & Technology 17, 524-534,2006 (IF3.739);

5. Liu-ping Fan, Min Zhang\*, Mujumdar Arun S, Effect of various pretreatment on the quality of vacuum-fried carrot chips, *Drying Technology*, 24: 1481–1486, 2006 (IF1.171);
6. Yanyang Xu , Min Zhang\*, Arun S. Mujumdar, Xu Duan, SUN Jin-cai, A two-stage vacuum freeze and convective air -drying technique for strawberries, *Drying Technology*,24: 1019–1023, 2006 (IF1.171);
7. Hu Qing-guo, Zhang Min\*, Arun S. Mujumdar, Du Weihua and Sun Jin-cai, Effects of Different Drying Methods on the Quality Changes of Granular Edamame, *Drying Technology*, 24: 1025–1032, 2006 (IF1.171);
8. Hu Qing-guo, Min Zhang\*, Arun S. Mujumdar, Xiao Gong-nian and Sun Jin-cai, Drying of Edamames by hot air and vacuum microwave combination, *Journal Of Food Engineering*, 77(4), 977-982,2006 (IF1.848)
9. Qing-guo Hu, Min Zhang\*, Mujumdar Arun S., Gong-nian Xiao, Jin-cai Sun, Performance evaluation of vacuum microwave drying of edamame in deep-bed drying, *Drying Technology*, 25(4): 731-736,2007 (IF1.171);
10. Fan Liu-ping, Zhang Min\*, Arun S. Mujumdar, Storage stability of carrot chips, *Drying Technology*, 25(9), 1533 – 1539,2007 (IF1.171);
11. Hui Cao, Min Zhang\*, Mujumdar Arun S., Gong-nian Xiao, Jin-cai Sun, Study on reduction of water activity and storage stability for dehydrated Brassica parachineusis with intermediate moisture, *Drying Technology*, 25(4), 669 – 674,2007 (IF1.171);
12. Xu Duan, Min ZHANG\*, Arun S. Mujumdar, Studies on the Microwave Freeze-drying Technique and Sterilization Characteristic of Cabbage, *Drying Technology*, 25(10), 1725 – 1731, 2007 (IF1.171);
13. Xu Duan, Min ZHANG\*, Arun S. Mujumdar, Study on a Combination Drying Technique of Sea Cucumber, *Drying Technology*, 25: 2011-2019, 2007 (IF1.171);
14. Xian-ju Song, Min ZHANG\*, Arun S. Mujumdar, Optimization of vacuum microwave pre-drying and vacuum frying conditions to produce fried potato chips, *Drying Technology*, 25: 2027-2034, 2007 (IF1.171);
15. Xian-ju Song, Min ZHANG\*, Arun S. Mujumdar, Effect of vacuum microwave pre-drying on quality of vacuum fried potato chips, *Drying Technology*, 25: 2021-2026, 2007 (IF1.171);
16. Xu Duan, Min Zhang \*, Xinlin Li, Arun S. Mujumdar, Microwave Freeze Drying of Sea Cucumber Coated with Nanoscale Silver, *Drying Technology*, 26(4): 413 – 419, 2008 (IF1.171).
17. Xu Duan, Min Zhang\*, Xinlin Li, Arun S. Mujumdar, Ultrasonically Enhanced Osmotic Pretreatment of Sea Cucumber Prior to Microwave Freeze Drying, *Drying Technology*, 26(4):420 – 426,2008 (IF1.171)
18. Zhiqing Gong, Min Zhang \*, Arun S. Mujumdar, and Jincai Sun, Spray Drying and Agglomeration of Instant Bayberry Powder, *Drying Technology*, 26 (1): 116-121, 2008 (IF1.171).
19. Luelue Huang, Min Zhang\*, Arun S. Mujumdar, Chunhua Zhang, Donghe Lu and Jincai Sun, Studies on Controlling Surface Accumulation of Glucose on Dehydrated Cabbage, *Drying Technology*, 26(7): 931 – 935, 2008 (IF1.171)
20. Luelue Huang, Min Zhang\*, Wei-qiang Yan, Arun S. Mujumdar, Dong-feng Sun, Studies on the Coating and Post-Drying of Freeze Dried Strawberry Pieces, *Journal Of Food Engineering* 92 (1) : 107-111, 2009 (IF1.848)

21. HanShan Xu, Min Zhang\*, Xu Duan, Arun S. Mujumdar, Jincai Sun, Effect of power ultrasound on the frozen pretreatment of freeze-dried edamame, *Drying Technology*, 27(2): 186 – 193, 2009 (IF1.171).
22. Xian-ju Song, Min Zhang\*, Arun S. Mujumdar, Drying characteristics and kinetics of vacuum microwave dried potato slices, *Drying Technology*, accepted (IF1.171)
23. Zhiqing Gong , Leyi Gao, Jianshen An, Min Zhang\*, A. S. Mujumdar ,Jincai Sun, Effects of pre-drying and vacuum impregnation with nano-calcium carbonate solution on strawberry, carrot, corn and blueberry, *Drying Technology*, accepted (IF1.171)
24. Lue-lue Huang, Min Zhang\*, Arun S. Mujumdar,Dong-feng Sun, Guan-wei Tan, Shameel Tang, Studies on decreasing energy consumption for a freeze-drying process, *Drying Technology*, accepted (IF1.171)
25. Rui Wang, Min Zhang\*, Arun S. Mujumdar, Microwave freeze drying characteristics and sensory quality of instant vegetable soup, *Drying Technology*, accepted (IF1.171)
26. Xu Duan, Min Zhang\*, Arun S. Mujumdar, R. Wang, Trends in microwave-assisted freeze drying of foods, To appear in *Drying Technology*, 2010.