



**SMS instruments are used over a wide range of disciplines. To keep abreast with cutting edge research using dynamic vapor sorption and inverse gas chromatography, SMS regularly reviews the literature. The below papers present recent peer-reviewed articles utilizing gravimetric vapor sorption or inverse gas chromatography.**

### DVS Articles:

J Teng, S Bates, DA Engers, K Leach, P Schields, and YL Yang, "**Effect of water vapor sorption on local structure of PVP**" *Journal of Pharmaceutical Sciences*, 99(9): 3815-3825 (2010).

P Chakravarty, R Govindarajan, and R Suryanarayanan, "**Investigation of solution and vapor phase mediated phase transformation in thiamine hydrochloride**" *Journal of Pharmaceutical Sciences*, 99(9): 3941-3952 (2010).

F Chivrac, H Angellier-Coussy, V Guillard, E Pollet, and L Averous, "**How does water diffuse in starch/montmorillonite nano-biocomposite materials?**" *Carbohydrate Polymers*, 82(1): 128-135 (2010).

E Ma, T Nakao, GJ Zhao, H Ohata, and S Kawamura, "**Relation between moisture sorption and hygroexpansion of sitka spruce during adsorption processes**" *Wood and Fiber Science*, 42(3): 304-309 (2010).

J Vollenbroek, GA Hebbink, S Ziffels, and H Steckel, "**Determination of low levels of amorphous content in inhalation grade lactose by moisture sorption isotherms**" *International Journal of Pharmaceutics*, 395(1-2): 62-70 (2010).

Z Ahmad, MP Ansell, and D Smedley, "**Effect of nano- and micro-particle additions on moisture absorption in thixotropic room temperature cure epoxy-based adhesives for bonded-in timber connections**" *International Journal of Adhesion and Adhesives*, 30(6): 448-455 (2010).

CAS Hill, AJ Norton, and G Newman, "**The water sorption properties of Sitka spruce determined using a DVS apparatus**" *Wood Science and Technology*, 44(3): 497-514 (2010).

N Silalai and YH Roos, "**Roles of water and solids composition in the control of glass transition and stickiness of milk powders**" *Journal of Food Science*, 75(5): E285-E296 (2010).

SS Paes, SM Sun, W MacNaughtan, R Ibbett, J Ganster, TJ Foster, and JR Mitchell, "**The glass transition and crystallization of ball milled cellulose**" *Cellulose*, 17(4): 693-709 (2010).

K Okamoto, K Yaguchi, H Yamamoto, KC Chen, N Endo, M Higa, and H Kita, "**Sulfonated polyimide hybrid membranes for polymer electrolyte fuel cell applications**" *Journal of Power Sources*, 195(18): 5856-5861 (2010).

T Kouza, Y Hirata, and K Hamada, "**Sorption of water vapor of EVAL/PAA blend nano-nonwovens by layer-by-layer technique**" *Desalination and Water Treatment*, 17(1-3): 2-9 (2010).

C Barba, M Marti, AM Manich, J Carilla, JL Parra, and L Coderch, "**Water absorption/desorption of human hair and nails**" *Thermochimica Acta*, 503: 33-39 (2010).

D Argyropoulos, A Rainer, and J Mueller, "**Establishing moisture sorption isotherms of wild mushroom varieties using a DVS method**" Proceedings from the XVII<sup>th</sup> World Congress of the International Commission of Agricultural and Biosystems Engineering, (2010).

H Adi, PM Young, HK Chan, H Agus, and D Traini, "**Co-spray-dried mannitol-ciprofloxacin dry powder inhaler formulation for cystic fibrosis and chronic obstructive pulmonary disease**" *European Journal of Pharmaceutical Sciences*, 40(3): 239-247 (2010).

ZJ Liang, M Marshall, and AL Chaffee, "**CO<sub>2</sub> adsorption, selectivity and water tolerance of pillared-layer metal organic frameworks**" *Microporous and Mesoporous Materials*, 132(3): 305-310 (2010).

Y Sato, Y Wada, and A Higo, "**Analysis of water layers and the extent of gelatinization for commercial starch products**" *Journal of Food Engineering*, 100(2): 201-207 (2010).

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## **IGC Articles:**

DT Yazici, "**Investigating the surface properties of polymer-coated clay by IGC**" *Surface and Interface Analysis*, 42(36-7): 974-977 (2010).

C Bilgic, DT Yazici, and N Vural, "**Characterizing the surface acidity of bentonite by various methods**" *Surface and Interface Analysis*, 42(6-7): 1000-1004 (2010).

LY Zhao and Y Boluk, "**XPS and IGC characterization of steam treated triticale straw**" *Applied Surface Science*, 257(1): 180-185 (2010).

E Csiszar and E Fekete, "**Characterization of the surface properties of differently scoured cotton by IGC at infinite dilution**" *Textile Research Journal*, 80(13): 1307-1316 (2010).

BA Higgins, DL Simonson, EJ Houser, JG Kohl, and RA McGill, "**Synthesis and characterization of hyperbranched hydrogen bond acidic carbosilane sorbent polymer**" *Journal of Polymer Science A*, 48(14): 3000-3009 (2010).

AL Revelli, F Mutelet, JN Jaubert, M Garcia-Martinez, LM Sprunger, WE Acree, and GA Baker, "**Study of ether-, alcohol-, or cyano-functionalized ionic liquids using IGC**" *Journal of Chemical Engineering Data*, 55(7): 2434-2443 (2010).

MT Leubbers, TJ Wu, LJ Shen, and RI Masel, "**Trends in the adsorption of volatile organic compounds in a large-pore metal-organic framework, IRMOF-1**" *Langmuir*, 26(13): 11319-11329 (2010).

S Das, I Larson, P Young, and P Stewart, "**Understanding lactose behavior during storage by monitoring surface energy change using IGC**" *Dairy Science & Technology*, 90(2-3): 271-285(2010).

YH Chen, L Jallo, MAS Quintanilla, and R Dave, "**Characterization of particle and bulk level cohesion reduction of surface modified fine aluminum powders**" *Colloids and Surfaces A*, 361(1-3): 66-80 (2010).

A Marciniak, "**The solubility parameters of ionic liquids**" *International Journal of Molecular Sciences*, 11(5): 1973-1990 (2010).

YH Wang, CM Gong, JS Sun, H Gao, SA Zheng, and SM Xu, "**Separation of ethanol/water azeotrope using compound starch-based adsorbents**" *Bioresource Technology*, 101(15): 6170-6176 (2010).

B Zamora, M Autie, JL Contreras, M Centeno, and E Reguera, "**Separation of oxygen and nitrogen by porous cyanometallates**" *Separation science and technology*, 45(5): 692-699 (2010).

X Ma, B Wigington, and D Bouchard, "**Fullerene C-60: Surface Energy and Interfacial Interactions in Aqueous Systems**" *Langmuir*, 26(14): 11886-11893 (2010).

V Puri, AK Dantuluri, M Kuma, N Karar, AK Bansal, "**Wettability and surface chemistry of crystalline and amorphous forms of a poorly water soluble drug**" *European Journal of Pharmaceutical Sciences*, 40(2): 84-93 (2010).

## **Recent SMS Application Notes, Case Studies, or Presentations:**

Controlled Release Society; Portland: Correlating Surface Energetics to Dissolution Rates of Aspirin.

## **Upcoming SMS Conferences:**

**Society of World Science and Technology:** Geneva, Switzerland, 11-15 Oct. 2010; **AAPS:** New Orleans, LA, 14-18 Nov. 2010; **Fuel Cell Seminar:** San Antonio, TX, 18-22 Oct. 2010; **Eastern Analytical:** Somerset, NJ, 15-18 Nov. 2010.

## **Upcoming SMS Training Courses and Seminars:**

Zum Pharma-Praxis-Tag 'Umfassende Stoffcharakterisierung in der Pharmazie': Frankfurt, Germany, 25 November 2010.