



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:

GM Geise, BD Freeman, and DR Paul, "Characterization of sulfonated pentablock copolymer for desalination applications" *Polymer*, 51(24): 5815-5822 (2010).

K Imamura, T Yokoyama, A Fukushima, M Kinuhata, and K Nakanishi, "Water sorption, glass transition, and protein-stabilizing behavior of an amorphous sucrose matrix combined with various materials" *Journal of Pharmaceutical Sciences*, 99(1): 4669-4677 (2010).

TL Neoh, K Koecher, G Reineccius, T Furuta, and H Yoshii, "Dissociation characteristic of the inclusion complex of cyclomaltohexaose (alpha-cyclodextrin) with 1-methylcyclopropene in response to stepwise rising relative humidity" *Carbohydrate Research*, 345(14): 2085-2089 (2010).

X Li, HL Li, SQ Huo, and Z Li, "Dynamics and isotherms of water vapor sorption on mesoporous silica gels modified by different salts" *Kinetics and Catalysis*, 51(5): 754-761 (2010).

N Redman-Furey, K Poiesz, J Miller, and C Grundner, "An evaluation of primary water standards by TG/DTA and vapor sorption analysis" *Journal of Thermal Analysis and Calorimetry*, 102(2): 633-639 (2010).

Z Jalaludin, CAS Hill, HW Samsi, H Husain, and YJ Xie, "Analysis of water vapour sorption of oleo-thermal modified wood of *Acacia mangium* and *Endospermum malaccense* by a parallel exponential kinetics model and according to the Hailwood-Horrobin model" *Holzforschung*, 64(6): 763-770 (2010).

C Masclaux, F Gouanve, and E Espuche, "Experimental and modeling studies of transport in starch nanocomposite films as affected by relative humidity" *Journal of Membrane Science*, 363(1-2): 221-231 (2010).

F Tewes, L Tajber, OI Corrigan, C Ehrhardt, and AM Healy, "Development and characterization of soluble polymeric particles for pulmonary peptide delivery" *European Journal of Pharmaceutical Sciences*, 41(2): 337-352 (2010).

J Lu and S Rohani, "Synthesis and preliminary characterization of sulfamethazine-theophylline co-crystal" *Journal of Pharmaceutical Sciences*, 99(9): 4042-4047 (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).

V Zupancic, M Smrkolj, P Benkic, I Simonic, M Plevnik, G Ritlop, A Kristl, and F Vrečer, "Preformulation investigation of some clopidogrel addition salts" *Acta Chimica Slovenica*, 57(2): 376-385 (2010).

YJ Xie, CAS Hill, ZF Xiao, Z Jalaludin, H Militz, and C Mai, "Water vapor sorption kinetics of wood modified with glutaraldehyde" *Journal of Applied Polymer Science*, 117(3): 1674-1682 (2010).

## iGC Articles:

R Al Akoum, C Vaultot, D Schwartz, MP Hirn, and B Haidar, "**How silanization of silica particles affects the adsorption of PDMS chains on its surface**" *Journal of Polymer Science B*, 48(22): 2371-2378 (2010).

A Amari, M Chlendi, A Gannouni, and A Bellagi, "**Experimental and theoretical studies of VOC adsorption on acid-activated bentonite in a fixed-bed adsorber**" *Industrial & Engineering Chemistry Research*, 49(22): 11587-11593 (2010).

H Ohashi, T Ito, and T Yamaguchi, "**Prediction of self-diffusivity in multicomponent polymeric systems using shell-like free volume theory**" *Industrial & Engineering Chemistry Research*, 49(22): 11676-11681 (2010).

R Menzel, MQ Tran, A Menner, CWM Kay, A Bismarck, and MSP Shaffer, "**A versatile, solvent-free methodology for the functionalisation of carbon nanotubes**" *Chemical Science*, 1(5): 603-608 (2010).

Z Marton, L Chaput, G Pierre, and M Graber, "**Lipase hydration stat in the gas phase: sorption isotherm measurements and inverse gas chromatography**" *Biotechnology Journal*, 5(11): 1216-1225 (2010).

S Peterlin, O Planinsek, I Moutinho, P Ferreira, and D Dolenc, "**IGC analysis of spruce fibers with different lignin content**" *Cellulose*, 17(6): 1095-1102 (2010).

LJ Jallo, M Schoenitz, EL Dreizin, and CE Johnson, "**The effect of surface modification of aluminum powder on its flowability, combustion and reactivity**" *Powder Technology*, 204(1): 63-70 (2010).

MT Luebbbers, TJ Wu, LJ Shen, and RI Masel, "**Effects of molecular sieving and electrostatic enhancement in the adsorption of organic compounds on the zeolitic imidazolate framework ZIF-8**" *Langmuir*, 26(19): 15625-15633(2010).

AL Revelli, F Mutelet, and JN Jaubert, "**High carbon dioxide solubilities in imidazolium-based ionic liquids and in poly(ethylene glycol) dimethyl ether**" *Journal of Physical Chemistry B*, 114(40): 12908-12913 (2010).

SM Bardavid, PC Schulz, and EL Arancibia, "**Miscibility of anhydrous cationic surfactant mixtures**" *Journal of molecular liquids*, 156(2-3): 165-170 (2010).

IM de Arenaza, E Meaurio, B Coto, and JR Sarasua, "**Molecular dynamics modeling for the analysis and prediction of miscibility in polylactide/polyvinilphenol blends**" *Polymer*, 51(19): 4431-4438 (2010).

R Anantharaj and T Banerjee, "**COSMO-RS-based screening of ionic liquids as green solvents in denitrification studies**" *Industrial & Engineering Chemistry Research*, 49(18): 8705-8725 (2010).

NS Bobbitt and JW King, "**Physicochemical characterization of dilute n-alcohol/biodiesel mixtures by inverse gas chromatography**" *Journal of Chromatography A*, 1217(50): 7898-7906 (2010).

B Strzemiescka, A Voelkel, and M Kasperkowiak, "**Characterization of zeolites as potential new generation fillers in abrasive articles.**" *Colloids and Surfaces A*, 372(1-2): 80-85 (2010).

SJ Hayward, YD Lei, and F Wania, "**Sorption of a diverse set of organic chemical vapors onto XAD-2 resin: Measurement, prediction and implications for air sampling**" *Atmospheric Environment*, 45(2): 296-302 (2011).

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

**AAPS**: New Orleans, LA: In-Situ Monitoring of a Moisture-Induced Polymorphic Transition using Raman Spectroscopy and Gravimetric Vapor Sorption; In-Situ Monitoring of a Moisture-Induced Polymorphic Transition using Raman Spectroscopy and Gravimetric Vapor Sorption; Milling Effects on Aspect Ratio and Surface Energy Heterogeneity for Mannitol; Milling-induced changes to surface energy distribution of budesonide.

## Upcoming SMS Conferences:

**Adhesion Society**: Savannah, GA, 13-15 February 2011; **German Zeolite Conference**: Erlangen, Germany, 2-4 March 2011; **Polymer Nanocomposites**: Bethlehem, PA, 7-9 March 2011; **European Coatings Show**: Nuremberg, Germany, 29-30 March 2011.

## Upcoming SMS Training Courses and Seminars:

SMS US Office: 24-25 May 2011; Contact local office for details.

## Head Office & ROW

Surface Measurement Systems Ltd  
5 Wharfside, Rosemont Road  
London HA0 4PE, UK  
Tel: +44 (0)20 8795 9400  
Email: [sales@smsuk.co.uk](mailto:sales@smsuk.co.uk)

## USA

Surface Measurement Systems Ltd NA  
2125 28th Street SW, Suite 1  
Allentown, PA 18103 USA  
Tel: +1 610 798 8299  
Email: [sales@smsna.com](mailto:sales@smsna.com)