

July 2011

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:

N De Belie, J Kratky and S Van Vlierberghe, "**Influence of pozzolans and slag on the microstructure of partially carbonated cement paste by means of water vapour and nitrogen sorption experiments and BET calculations**" *Cement and Concrete Research*, 40(12): 1723-1733 (2010).

Y Amharar, S Petit, M Sanselme, Y Cartigny, M-N Petit, and G Coquerel, "**Crystal Structures, dehydration mechanism, and chiral discrimination in the solid state of a hydantion derivative**" *Crystal Growth & Design*, 11(6): 2453-2462 (2011).

T Buruiana, V Melinte, G Costin, and EC Bruiana, "**Synthesis and properties of liquid crystalline urethane methacrylates for dental composite applications**" *Journal of Polymer Science A*, 49(12): 2615-2626 (2011).

KP Singh, HN Mishra, and S Saha, "**Sorption isotherms of barnyard millet grain and kernel**" *Food and Bioprocess Technology*, 4(5): 788-796 (2011).

S Jeck, P Scharfer, and M Kind, "**Absence of Schreder's paradox: Experimental evidence for water-swollen Nafion membranes**" *Journal of Membrane Science*, 373(1): 74-79 (2011).

Y Zhou and JH Roos, "**characterization of carbohydrate-protein matrices for nutrient delivery**" *Journal of Food Science*, 76(4): E368-E376 (2011).

K Sigfridsson, M Ahlqvist, M Lindsjo, and S Paulsson, "**Early development evaluation of AZD2738**" *Drug Development and Industrial Pharmacy*, 37(6): 719-726 (2011).

YJ Xie, CAS Hill, Z Jalaludin, and D Sun, "**The water vapour sorption behavior of three celluloses: analysis using parallel exponential kinetics and interpretation using the Kelvin-Voight viscoelastic model**" *Cellulose*, 18(3): 517-530 (2011).

KY Lee, F Quero, JJ Blaker, CAS Hill, SJ Eichhorn, and A Bismarck, "**Surface only modification of bacterial cellulose nanofibres with organic acids**" *Cellulose*, 18(3): 595-605 (2011).

RS Jagadish and B Raj, "**Properties and sorption studies of polyethylene oxide-starch blended films**" *Food Hydrocolloids*, 25(6): 1572-1580 (2011).

S Alix, L Lebrun, C Morvan, and S Marais, "**Study of water behavior of chemically treated flax fibres-based composites: A way to approach the hydric interface**" *Composites Science and Technology*, 71(6): 893-899 (2011).

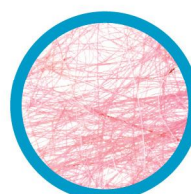
TM Chitu, D Oulahna, and M Hemati, "**Rheology, granule growth and granule strength: Application to the wet granulation of lactose-MCC mixtures**" *Powder Technology*, 208(2): 441-453 (2011).

PS Lam, S Sokhansanj, XT Bi, CJ Lim, and S Melin, "**Energy input and quality of pellets made from steam-exploded douglas fir**" *Energy & Fuels*, 25(4): 1521-1528 (2011).

S Paunonen, M Lenes, and O Gregersen, "**Moisture content of polyethylene coated solid fibreboard after industrial lamination**" *Packaging Technology and Science*, 24(3): 147-160 (2011).

A Nistor, G Stiubianu, C Racles, and M Cazacu, "**Evaluation of the water sorption capacity of some polymeric materials by dynamic vapour sorption**" *Materiale Plastice*, 48(1): 33-37 (2011).

PD Kaplan, T Polefka, G Grove, S Daly, L Jumbelic, D Harper, M Nori, T Evans, R Ramaprasad, and R Bianchini, "**Grey hair:**



# The Total Sorption Solution

## **clinical investigation into changes in hair fibres with loss of pigmentation in a photoprotected population"**

*International Journal of Cosmetic Science*, 33(2): 171-182 (2011).

CAS Hill and YJ Xie, "**The dynamic water vapour sorption properties of natural fibres and viscoelastic behavior of the cell wall: is there a link between sorption kinetics and hysteresis?**" *Journal of Materials Science*, 46(11): 3738-3748(2011).

MJ Xu, GM Chen, JL Fan, JH Liu, XG Xu, and SZ Zhang, "**Moisture sorption characteristics of freeze-dried human platelets**" *Journal of Zhejiang University-Science B*, 12(3): 210-218 (2011).

LG Gordeeva and YI Aristov, "**Composite sorbent of methanol 'LiCl in mesoporous silica gel' for adsorption cooling: Dynamic optimization**" *Energy*, 36(2): 1273-1279 (2011).

QE Li and SJ Schmidt, "**Use of ramping and equilibrium water vapor sorption methods to determine the critical relative humidity at which the glassy to rubbery transition occurs in polydextrose**" *Journal of Food Science*, 76(1): E149-E157 (2011).

## IGC Articles:

S Ramanaiah, PR Rani, TVM Sreekanth, and KS Reddy, "**Determination of Hansen solubility parameters for the solid surface of cellulose acetate butyrate by IGC**" *Journal of Macromolecular Science Part B*, 50(3): 551-562 (2011).

U Domanska, M Zawadzki, M Krolikowska, MM Tshibangu, D Ramjugernath, and TM Letcher, "**Measurements of activity coefficients at infinite dilution of organic compounds and water in isoquinolinium-based ionic liquid [C(8)iQuin][NTf2] using GLC**" *Journal of Chemical Thermodynamics*, 43(3): 499-504 (2011).

M Yamauchi, EH Lee, A Otte, SR Byrn, and MT Carvajal, "**Contrasting the surface and bulk properties of anhydrate and dehydrated hydrate materials**" *Crystal Growth & Design*, 11(3): 692-698 (2011).

NS Trasi, SXM Boerrigter, SR Byrn, and TM Carvajal, "**Investigating the effect of dehydration conditions on the compactability of glucose**" *International Journal of Pharmaceutics*, 406(1-2): 55-61 (2011).

AE Jefferson, DR Williams, and JYY Heng, "**Computing the Surface energy distributions of heterogeneous crystalline**

**powders**" *Journal of Adhesion Science and Technology*, 25(4-5): 339-355-374 (2011).

N Siddiqui, RH Mills, DJ Gardner, and D Bousfield, "**Production and characterization of cellulose nanofibers from wood pulp**" *Journal of Adhesion Science and Technology*, 25(6-7): 709-721 (2011).

PR Rani, S Ramanaiah, and KS Reddy, "**Lewis acid-base properties of cellulose acetate butyrate by IGC**" *Surface and Interface Analysis*, 43(3): 683-688 (2011).

JP Hallett and T Welton, "**Room-temperature ionic liquids: Solvents for synthesis and catalysis**" *Chemical Reviews*, 111(5): 3508-3576 (2011).

T Hanai, "**Quantitative in silico analysis of the specificity of graphitized (graphitic) carbons**" *Advances in Chromatography*, 49: 257-290 (2011).

A Bertora, M Castellano, E Marsano, M Alessi, L Conzatti, P Stagnaro, G Colucci, A Priola, and A Turturro, "**A new modifier for silica in reinforcing SBR elastomers for the tyre industry**" *Macromolecular Materials and Engineering*, 296(5): 455-464 (2011).

TVM Sreekanth and KD Lee, "**Surface analysis of poly (ethylene glycol) methyl ether by IGC**" *International Journal of Polymer Analysis and Characterization*, 16(3): 165-176 (2011).

JG Alvarez, DB Gomis, PA Abrodo, DD Llorente, E Busto, NR Lombardia, VG Fernandez, and MDG Alvarez, "**Evaluation of new ionic liquids as high stability selective stationary phases in gas chromatography**" *Analytical and Bioanalytical Chemistry*, 400(5): 1209-2116 (2011).

T Hamieh, "**Study of the specific entropy of poly (alpha-n-alkyl) methacrylates on alumina or silica by IGC**" *Soft Materials*, 9(1): 15-31 (2011).

D Maafa, H Balard, and J.-B. Donnet, "**Comparison of the superficial properties of pyrolysis recycled and standard carbon blacks, using IGC**" *KGK-Kautschuk Gummi Kunststoffe*, 64(4): 24-28 (2011).

P Alessi, A Cortesi, I Kikic, D Solinas, N De Zordi, and M Moneghini, "**Infinite-dilution activity coefficients of volatile organic compounds in cyclic olefin copolymers**" *Journal of Chemical and Engineering Data*, 56(4): 1255-1260 (2011).

ZS Dai, FH Shi, M Li, and ZG Zhang, "Effect of sizing on carbon fiber surface properties and fibers/epoxy interfacial adhesion" *Applied Surface Science*, 257(15): 6980-6985 (2011).

A Otte and MT Carvajal, "Assessment of milling-induced disorder of two pharmaceutical compounds" *Journal of Pharmaceutical Sciences*, 100(5): 1793-1804 (2011).

T Hamieh, "Determination of Lewis acid base properties of poly(alpha-n-alkyl) methacrylates adsorbed on silica by IGC" *Chromatographia*, 73(7-8): 709-719 (2011).

TM Roshchina, NK Shoniya, OY Tayakina, and AY Fedeev, "Vapor phase adsorption of organic compounds on octyl silicas" *Russian Journal of Physical Chemistry*, 85(2): 298-305 (2011).

A Marciniak, "Influence of anion structure on the liquid-liquid equilibria of 1-ethyl-3-methyl-imidazolium cation based ionic liquid-hydrocarbon binary systems" *Journal of Chemical and Engineering Data*, 56(3): 368-374 (2011).

## New SMS Publications:

J Brum and D Burnett, "Quantification of surface amorphous content using dispersive surface energy: the concept of effective amorphous surface area" *AAPS PharmSciTech*, in press (2011).

## Upcoming Conferences:

**Controlled Release Society:** Baltimore, MD, USA; 30 July – 03 August 2011.

**UK PharmSci Fair:** Nottingham, UK; 30 July – 02 August 2011.

**17<sup>th</sup> International Hair Symposium:** Kloster Irsee, Germany; 06-08 September 2011.

**Technopharm Powtech:** Nuremberg, Germany; 11-13 October 2011.

**American Association of Pharmaceutical Scientists:** Washington, D.C., USA; 23-27 October 2011.

## SMS Training:

**SMS UK Office:** 06-07 September 2011; email [science@smsuk.co.uk](mailto:science@smsuk.co.uk) for details.

**DACH User Meeting:** 19-20 October 2011; email [TSchmid@smsuk.co.uk](mailto:TSchmid@smsuk.co.uk) for details.

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