

List of Publications Dr.-Ing. Philip Scharfer (04/2011)

Summary:

Reviewed Journal and Book Contributions:	28
Conference Contributions:	84
Invited Talks and oral Presentations:	23

Reviewed Journal and Book Contributions

2010

- [28] B. Schmidt-Hansberg, M.F.G. Klein, K. Peters, F. Buss, J. Pfeifer, S. Walheim, A. Colsmann, U. Lemmer, **P. Scharfer** and W. Schabel (2010). *In-situ monitoring of the drying kinetics of knife coated polymer-fullerene films for organic* Virtual Journal of Nanoscale Science & Technology 21, 1 (featured article)
- [27] J. Krenn, S. Baesch, B. Schmidt-Hansberg, M. Baunach, **P. Scharfer**, W. Schabel (2010). *Numerical investigation of the local mass transfer on flat plates in laminar flow*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.10.002 (in press)
- [26] B. Schmidt-Hansberg, M. Baunach, J. Krenn, S. Walheim, **P. Scharfer**, W. Schabel (2010). *Spatially resolved drying kinetics of multi-component solution cast films for organic electronics*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.12.012 (in press)
- [25] L. Wengeler, B. Schmidt-Hansberg, K. Peters, M. Schmitt, F. Brunner, K. Döring, F. Rauscher, P. Niyamakom, **P. Scharfer**, W. Schabel (2010). *Investigations on knife and slot die coating and processing of polymer nanoparticle films for hybrid polymer solar cells*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.11.002 (in press)
- [24] L. Wengeler, M. Schmitt, **P. Scharfer**, W. Schabel (2010). *Designing a sensor for local heat transfer in impingement driers*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.08.009 (in press)
- [23] K. Peters, J. Braun, B. Schmidt-Hansberg, **P. Scharfer**, W. Schabel (2010). *Phase equilibrium of water in different types of PEDOT:PSS*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.11.005 (in press)
- [22] M. Müller, **P. Scharfer**, M. Kind, W. Schabel (2010). *Influence of non-volatile additives on the diffusion of solvents in polymeric coatings*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.10.001 (in press)
- [21] J. Krenn, **P. Scharfer**, W. Schabel (2010). *Visualization of surface deformations during thin film drying using a Digital-Image-Correlation method*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.10.005 (in press)

- [20] S. Jeck, **P. Scharfer**, M. Kind (2010). *Water sorption in poly(vinyl alcohol) membranes: An experimental and numerical study of solvent diffusion in a crosslinked polymer*, Chemical Engineering and Processing, doi:10.1016/j.cep.2010.09.004 (in press)
- [19] M. Müller, **P. Scharfer**, M. Kind, W. Schabel (2010). *Bestimmung von Diffusionskoeffizienten nicht-flüchtiger Additive in Polymerbeschichtungen mit Hilfe der Inversen-Mikro-Raman-Spektroskopie*, Chemie Ingenieur Technik 82 (12), 2097-2102

2009

- [18] P. Scharfer (2009). *Zum Stofftransport in Brennstoffzellenmembranen - Untersuchungen mit Hilfe der konfokalen Mikro-Raman-Spektroskopie*, Dissertation Universität Karlsruhe (TH), KIT Scientific Publishing ISBN-10: 386644432X, ISBN-13: 9783866444324
- [17] B. Schmidt-Hansberg, M. F. G. Klein, K. Peters, F. Buss, J. Pfeifer, S. Walheim, A. Colsmann, U. Lemmer, **P. Scharfer**, W. Schabel (2009). *In-situ monitoring the drying kinetics of knife coated polymer-fullerene films for organic solar cells*, Journal of Applied Physics 106 (12), 124501-124501
- [16] S. Jeck, **P. Scharfer**, M. Kind (2009). *Water sorption in physically crosslinked poly(vinyl alcohol) membranes: An experimental investigation of Schroeder's paradox*, Journal of Membrane Science 337 (1-2), 291-296
- [15] M. Müller, **P. Scharfer**, M. Kind, W. Schabel (2009). *A comparison between diffusion coefficients in polymer-solvent systems determined by gravimetric sorption experiments and spectroscopic monitored drying profiles*, Chemical Engineering Processing, eingereicht
- [14] J. Krenn, **P. Scharfer**, W. Schabel, M. Kind (2009). *Drying of solvent-borne coatings with pre-loaded drying gas*, The European Physical Journal Special Topics 166 (1), 45-48

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- [13] **P. Scharfer**, W. Schabel, M. Kind (2008). *Modelling of alcohol and water diffusion in fuel cell membranes - experimental validation by means of in situ Raman spectroscopy*, Chemical Engineering Science 63 (19), 4676 - 4684
- [12] W. Schabel, M. Müller, **P. Scharfer**, M. Kind, S. Kübler, A. Hartbrich (2007). *Mass transfer phenomena in the preparation of optical foils and thin films*, Chemie Ingenieur Technik 79 (9), 1489
- [11] **P. Scharfer**, W. Schabel, M. Kind (2007). *Untersuchung des Methanol-Crossovers in Nafion[®]-Membranen für Direkt-Methanol-Brennstoffzellen*, Chemie Ingenieur Technik 79 (9), 1490-1491
- [10] **P. Scharfer**, W. Schabel, M. Kind (2007). *Mass transport measurements in membranes by means of in situ Raman spectroscopy - first results of methanol and water profiles in fuel cell membranes*, Journal of Membrane Science 303 (1-2), 37-42

- [9] W. Schabel, I. Mamaliga, **P. Scharfer**, M. Kind (2007). *Sorption Equilibrium and Diffusion Coefficients in ternary polymer-solvent-solvent systems by means of a magnetic suspension balance*, Chemical Engineering Science, 62 (8), 2254-2266
- [8] **P. Scharfer**, J. Krenn, W. Schabel, M. Kind (2006). *Investigation of methanol diffusion in Nafion[®]-membranes for direct methanol fuel cells by means of Inverse Micro Raman Spectroscopy*, Proceedings of the 13th International Heat Transfer Conference, Sydney, 13.-18. August
- [7] C. Vallieres, D. Winkelmann, D. Roizard, E. Favre, **P. Scharfer**, M. Kind (2006). *On Schroeder's Paradox*, Journal of Membrane Science 278 (1), 357-364
- [6] W. Schabel, **P. Scharfer**, M. Müller, I. Ludwig, M. Kind (2006). *Concentration Profile Measurements in Polymeric coatings during drying by means of Inverse-Micro-Raman-Spectroscopy (IMRS)*, Raman Update Horiba Jobin Yvon, No. 3, 1-3
- [5] M. Müller, **P. Scharfer**, W. Schabel, M. Kind (2005). *Untersuchung des Trocknungsprozesses zur Herstellung pharmazeutischer Wirkstoffpflaster und Entwicklung eines Online-Feuchtesensors*, Chemie Ingenieur Technik 77 (8), 1118
- [4] M. Beiser, G. Bickert, **P. Scharfer** (2004). *Comparison of Sedimentation Behavior and Structure Analysis with Regard to Destabilization Processes in Suspensions*, Chemical Engineering and Technology 27 (10), 1084-1088
- [3] W. Schabel, **P. Scharfer**, M. Müller, I. Ludwig, M. Kind (2003). *Messung und Simulation von Konzentrationsprofilen bei der Trocknung binärer Polymerlösungen*, Chemie Ingenieur Technik 75 (9), 1336-1344
- [2] M. Beiser, G. Bickert, **P. Scharfer** (2003). *Vergleich von Sedimentations- und Strukturanalyse im Hinblick auf Entstabilisierungsvorgänge in Suspensionen*, Chemie Ingenieur Technik 75 (9), 1270-1274
- [1] W. Schabel, **P. Scharfer**, M. Kind (2003). *Messung und Simulation von Konzentrationsprofilen bei der Trocknung von dünnen Filmen mit Hilfe der Konfokalen-Mikro-Raman-Spektroskopie*, Chemie Ingenieur Technik 75 (8), 1105

Conference Contributions

2011

- [84] K. Peters, U. Berner, S. Hartmann, D. Bertram, **P. Scharfer**, W. Schabel (2011). *Liquid film coating of small molecule OLEDs (SMOLEDs) with multilayer device structure*, 9th European Coating Symposium, Turku/Finland/Karlsruhe, 8.-10. June 2011 (accepted contribution)
- [83] F. Buss, K. Crawford, K. Peters, **P. Scharfer**, W. Schabel and L.F. Francis (2011). *Particle distribution in a drying particulate coating under the influence of soluble polymer binder*, 9th European Coating Symposium, Turku/Finland/Karlsruhe, 8.-10. June 2011 (accepted contribution)

- [82] P. Cavadini, J. Krenn, **P. Scharfer**, W. Schabel (2011). *Investigation of surface deformation due to marangoni convection*, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [81] L. Wengeler, M. Schmitt, P. Darmstädter, C. Kroner, K. Peters, K. Köhler, P. Niyamakom, **P. Scharfer**, W. Schabel (2011). *Comparison of large scale coating techniques for polymer particle films in hybrid solar cells*, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [80] P. Cavadini, L. Wengeler, **P. Scharfer**, W. Schabel (2011). Investigation of heat transfer within an array of impinging jets with local extraction of spent fluid, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [79] **P. Scharfer**, K. Peters, W. Schabel (2011). Determination of mutual diffusion coefficients in polymer-solvent systems – a critical review of the scientific landscape, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [78] **P. Scharfer**, W. Schabel (2011). Investigation of multi-solvent mass transport during thin film drying by means of Inverse-Micro-Raman-Spectroscopy (IMRS), 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [77] M. Baunach, K. Peters, S. Indris, J. Tübke, **P. Scharfer**, W. Schabel (2011). Investigation on process induced morphology changes of lithiumion battery electrodes - initial results, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [76] M. Baunach, P. Cavadini, B. Schmidt-Hansberg, J. Krenn, W. Schabel, **P. Scharfer** (2011). Investigation of the gas phase mass transport on flat plates by experiment and numerical simulation, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [75] S. Kachel, Y. Zhou, S. DuVall, **P. Scharfer**, W. Schabel (2011). Drying and sorption behavior of waterborne polymer mixtures for biosensor films, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [74] S. Kachel, Y. Zhou, S. DuVall, **P. Scharfer**, W. Schabel (2011). Diffusion of water in polymer mixtures for blood glucose test strips, 9th European Coating Symposium, Turku/FinlandKarlsruhe, 8.-10. June 2011 (accepted contribution)
- [73] B. Schmidt-Hansberg, M. Kowalski, M. Klein, M. Sanyal, A., Colsmann, U. Lemmer, E. Barrena, **P. Scharfer**, W. Schabel (2011). *Phasengleichgewichte und Stofftransport in organischen Halbleitern: Selbstanordnungsprozesse in Polymersolarzellen*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Talk)
- [72] K. Peters, **P. Scharfer**, W. Schabel (2011). *Diffusionskoeffizientenmessungen in Polymerlösungen – ein kritischer Beitrag zu etablierten Messmethoden*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Poster)
- [71] S. Kachel, Y. Zhou, S. DuVall, **P. Scharfer**, W. Schabel (2011). *Diffusion of water in polymer mixtures for blood glucose test strips*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Poster)

- [70] S. Jeck, **P. Scharfer**, W. Schabel, M. Kind (2011). *Quantitative Bestimmung von Stofftransportparametern in vernetzten Polymersystemen*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Poster)
- [69] K. Peters, D. Griese, **P. Scharfer**, W. Schabel, S. Hartmann, D. Bertram (2011). *Untersuchung der Nassfilmabscheidung von Multischicht-OLED Bauelementen*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Poster)
- [68] P. Cavadini, J. Krenn, W. Schabel, **P. Scharfer** (2011). *Modellhafte Beschreibung von Marangoni-Effekten bei der Polymerfilmtrocknung*, ProcessNet Fachausschuss Wärme- und Stoffübertragung, Frankfurt 21.-22.03.2011 (Poster)

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- [67] L. Wengeler, B. Schmidt-Hansberg, K. Peters, F. Brunner, K. Döring, F. Rauscher, P. Nyamakom, **P. Scharfer**, W. Schabel (2010). *Beschichten und Trocknen hybrider Solarzellen*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Talk)
- [66] B. Schmidt-Hansberg, M. Baunach, M. Klein, M. Sanyal, C. Walsh, A. Colsmann, U. Lemmer, E. Barrena, **P. Scharfer**, W. Schabel (2010). *Kontrolle der Morphologie in organischen Solarzellen*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [65] S. Jeck, **P. Scharfer**, W. Schabel, M. Kind (2010). *Experimentelle und numerische Untersuchungen zur Lösemittel-Diffusion in semikristallinen Polymerfilmen*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [64] S. Kachel, Y. Zhou, S. DuVall, **P. Scharfer**, W. Schabel (2010). *Bestimmung des Diffusionskoeffizienten von Wasser in Polymerfilmen für Teststreifen*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [63] L. Wengeler, M. Schmitt, **P. Scharfer**, W. Schabel (2010). *Entwicklung eines Sensors zur Messung des lokalen Wärmeübergangs in Prallstrahl-trocknern*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [62] K. Peters, L. Wengeler, S. Hartmann, D. Bertram, **P. Scharfer**, W. Schabel (2010). *Beschichtung und Trocknung von SM-OLEDs*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [61] Peters, **P. Scharfer**, W. Schabel (2010). *Messung von Diffusionskoeffizienten in Polymerlösungen*, 28. DECHEMA-Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [60] J. Krenn, **P. Scharfer**, W. Schabel (2010). *In-situ Visualisierung von Oberflächendeformationen aufgrund konvektiver Stoffströme während der Prozessierung flüssig applizierter Polymerbeschichtungen*, 28. DECHEMA-

- Jahrestagung der Biotechnologen und ProcessNet-Jahrestagung 2010, 21.-23.09.2010, Aachen (Poster)
- [59] J. Krenn, **P. Scharfer**, W. Schabel (2010). *In-situ Measurement of Surface Structure Formation Caused by Marangoni Flows During Drying of Thin Films*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Talk)
- [58] L. Wengeler, B. Schmidt-Hansberg, K. Peters, **P. Scharfer**, W. Schabel (2010). *Investigations on slot die coating and processing of polymer nanoparticle films for hybrid polymer solar cells*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Talk)
- [57] K. Peters, M. Müller, **P. Scharfer**, W. Schabel (2010). *A critical comparison of diffusion coefficient measurements in polymer-solvent systems measured by means of gravimetric sorption experiments and spectroscopic methods*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Talk)
- [56] S. Jeck, **P. Scharfer**, W. Schabel, M. Kind (2010). *Solvent diffusion in semicrystalline polymer films – An experimental and numerical study*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Talk)
- [55] B. Schmidt-Hansberg, M. Baunach, M. Klein, M. Sanyal, C. Walsh, A. Colsmann, U. Lemmer, E. Barrena, **P. Scharfer**, W. Schabel (2010). *In-situ monitoring the film formation of solution cast polymer-fullerene blends for organic solar cells*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Talk)
- [54] B. Schmidt-Hansberg, J. Krenn, M. Baunach, S. Baesch, **P. Scharfer**, W. Schabel (2010). *Theoretical and experimental investigation of the gas phase mass transport on flat plates in laminar flow*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Poster)
- [53] S. Kachel, Y. Zhou, S. DuVall, **P. Scharfer**, W. Schabel (2010). *Determination of diffusion coefficients of water in polymeric films for blood glucose test strips*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Poster)
- [52] L. Wengeler, M. Schmitt, **P. Scharfer**, W. Schabel (2010). *Designing a sensor for local heat transfer in impingement driers*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Poster)
- [51] K. Peters, L. Wengeler, S. Hartmann, D. Bertram, **P. Scharfer**, W. Schabel (2010), *Coating and drying of SM-OLEDs*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Poster)
- [50] B. Schmidt-Hansberg, J. Krenn, M. Baunach, S. Baesch, **P. Scharfer**, W. Schabel (2010). *Experimental Investigation of the Gas Phase Mass Transport on Flat Plates in Laminar Flow*, 15th International Coating Science and Technology (ISCST) Symposium, 13.-15.09.2010, St. Paul MN, USA (Poster)

- [49] B. Schmidt-Hansberg, M. Sanyal, M. Klein, A. Colsmann, U. Lemmer, E. Barrena, **P. Scharfer**, and W. Schabel (2010) *Morphology formation in solution cast polymer-fullerene blends for organic photovoltaics*, 1st International Conference on Materials for Energy (ENMAT), 04.-08.07.2010, Karlsruhe, Germany (Talk)
- [48] K. Peters, L. Wengeler, B. Schmidt-Hansberg, **P. Scharfer**, W. Schabel (2010). *Coating and drying of SM-OLEDs*, 1st International Conference on Materials for Energy (ENMAT), 04.-08.07.2010, Karlsruhe, Germany (Poster)
- [47] L. Wengeler, B. Schmidt-Hansberg, F. Brunner, **P. Scharfer**, W. Schabel (2010), *Investigating coating and drying of polymer and hybrid solar cells*, 1st International Conference on Materials for Energy (ENMAT), 04.-08.07.2010, Karlsruhe, Germany (Poster)
- [46] B. Schmidt-Hansberg, M. Sanyal, M. Klein, A. Colsmann, U. Lemmer, E. Barrena, **P. Scharfer**, W. Schabel (2010). *In-situ Monitoring the Morphology Formation During Drying of Knife Coated Polymer-Fullerene Films for Organic Solar Cells*, MRS Spring Meeting 2010, 05.-09.04.2010, San Francisco, USA (Talk)
- [45] J. Krenn, **P. Scharfer**, W. Schabel (2010). *Oberflächendeformation aufgrund von oberflächenspannungsgetriebenen Stoffströmen während der Prozessierung flüssig applizierter Polymerbeschichtungen*, ProcessNet – Fachausschuss Wärme- und Stoffübertragung, 08.-10.03.2010, Hamburg (Talk)

2009

- [44] B. Schmidt-Hansberg, M.F.G. Klein, F. Pasker, H. Wettach, B. Brenneis, A. Colsmann, U. Lemmer, S. Höger, **P. Scharfer** and W. Schabel (2009). *Morphology formation during drying of solution cast polymer-fullerene blends for solar cell applications*, Workshop of the DFG Priority Program 1355 "Organic Photovoltaics", 30. Oktober, Dresden (Talk)
- [43] B. Schmidt-Hansberg, B. Brenneis, S. Jaiser, M. Klein, A. Colsmann, U. Lemmer, J. Pfeifer, S. Walheim, M. Sanyal, E. Barrena, **P. Scharfer**, W. Schabel (2009). *Phase behavior of solution cast polymer-fullerene blends during drying for organic solar cells*, 5th Plastic Electronics Europe, 27.-29. Oktober, Dresden (Poster)
- [42] **P. Scharfer**, W. Schabel (2009). *Simulation of industrial dryers with regard to the gas phase mass transport*, 10th Coatema International Coating Symposium, 1. Oktober (Talk)
- [41] **P. Scharfer**, Y. Zhou, J. Krenn (2009). *Influence of local gas phase mass transport coefficients on the drying rate of polymer films – a fundamental study*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [40] M. Müller, **P. Scharfer**, K. Peters, W. Schabel (2009). *Diffusion of non-volatile species in thin polymeric coatings*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [39] W. Schabel, **P. Scharfer**, M. Müller, J. Krenn, B. Schmidt-Hansberg, L. Wengeler, K. Peters (2009). *Drying Issues and Process Scale up of Solvent Casted Films for Flat*

- Panel Displays and Organic Electronics*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [38] L. Wengeler, Ike de Vries, **P. Scharfer**, W. Schabel (2009). *Local Heat and Mass Transfer in Slot Nozzle Driers for Organic Photovoltaic (OPV) and Organic Light Emitting Diode (OLED) Thin Films on Foil*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [37] M.Müller. K. Peters, **P. Scharfer**, W. Schabel (2009). *A critical review on diffusion coefficients in polymer-solvent systems measured by means of gravimetric sorption experiments and spectroscopic methods*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [36] S. Kachel, S. DuVall, H. Groll, **P. Scharfer**, W. Schabel (2009). *Water vapor sorption of amperometric biosensor films*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [35] F. Buss, S. Jaiser, B. Schmidt-Hansberg, J. Pfeifer, S. Walheim, **P. Scharfer**, W. Schabel (2009). *Moving through the phase diagram: Drying of solution cast polymer-fullerene films*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [34] Wengeler, B. Schmidt-Hansberg, **P. Scharfer**, W. Schabel (2009). *Roll to roll production of nano-particle based polymer solar cells on flexible substrates*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [33] K. Peters, B. Schmidt-Hansberg, L. Wengeler, **P. Scharfer**, W. Schabel (2009). *Feasibility Studies on Solution-processed Hole Injection Layers for Organic LEDs*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Poster)
- [32] S. Jeck, **P. Scharfer**, W. Schabel, M. Kind (2009). *Water sorption into thin films of semicrystalline polymer*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [31] J. Krenn, A. Adiwidjaja, **P. Scharfer**, W. Schabel (2009). *Formation of surface structures during thin film-drying*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [30] B. Schmidt-Hansberg, F. Buss, K. Peters, J. Pfeifer, S. Walheim, M.F.G. Klein, A. Colsmann, U. Lemmer, M. Sanyal, E. Barrena, **P. Scharfer** and W. Schabel (2009). *Morphology formation during drying of solution cast polymer-fullerene blends for solar cell applications*, 8th European Coating Symposium, Karlsruhe, 7.-9. September (Talk)
- [29] **P. Scharfer**, W. Schabel, M. Kind (2009). *Determination of Transport Parameters in Multi-Component Membrane Systems for Low-Temperature Fuel Cell Applications*, Frontiers in Polymer Science, Mainz, 7.-9. Juni (Poster)
- [28] **P. Scharfer**, Y. Zhou, J. Krenn (2009). *Influence of the Local Mass Transport in the Gas Phase on the Drying of Thin Polymeric Films*, Frontiers in Polymer Science, Mainz, 7.-9. Juni (Poster)
- [27] S. Kachel, Y. Zhou, **P. Scharfer**, W. Schabel (2009). *Water Vapour Sorption and Re-Hydration of Biosensor Films*, Frontiers in Polymer Science, Mainz, 7.-9. Juni (Poster)
- [26] B. Schmidt-Hansberg, F. Buss, S. Jaiser, **P. Scharfer**, M. Klein, A. Colsmann, U. Lemmer, S. Höger, M. Kind, W. Schabel (2009). *Phase separation during drying of*

polymer-fullerene-solutions for polymer solar cells, Frontiers in Polymer Science, Mainz, 7.-9. Juni (Poster)

- [25] **P. Scharfer**, W. Schabel, M. Kind (2009). *Bestimmung von Transportparametern in Mehrkomponenten-Membransystemen für den Einsatz in Niedertemperatur-Brennstoffzellen*, Fachausschuss Wärme- und Stoffübertragung, Bad Dürkheim, 3.-5. März (Talk)
- [24] **P. Scharfer**, Y. Zhou, J. Krenn (2009). *Einfluss des lokalen Stoffübergangs in der Gasphase bei der Herstellung dünner organischer Schichten*, Fachausschuss Wärme- und Stoffübertragung, Bad Dürkheim, 3.-5. März (Poster)
- [23] S. Jeck, **P. Scharfer**, M. Kind (2009). *Untersuchungen zum Einfluss des Quellverhaltens auf den Stofftransport in Hydrogelen*, Fachausschuss Wärme- und Stoffübertragung, Bad Dürkheim, 3.-5. März (Poster)

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- [22] S. Kachel, **P. Scharfer**, M. Müller, B. Schmidt-Hansberg, W. Schabel (2008). *Bioactive Thin Films – A new research field at KIT*, Chemical Nanotechnology Talks IX, 03.-04. November, Frankfurt (Poster)
- [21] B. Schmidt-Hansberg, N. Schnabel, K. Peters, **P. Scharfer**, W. Schabel (2008). *Phase separation during the drying process of the photoactive layer in polymer solar cells*, 14th International Coating Science and Technology Symposium der ISCST, 7.-10. September, Marina del Rey CA, USA (Talk)
- [20] J. Krenn, M. Sojka, **P. Scharfer**, M. Kind, W. Schabel (2008). *Surface structures during thin film drying caused by Marangoni convection*, 14th International Coating Science and Technology Symposium der ISCST, 7.-10. September, Marina del Rey CA, USA (Talk)
- [19] W. Schabel, **P. Scharfer**, M. Müller, J. Krenn, B. Schmidt-Hansberg (2008). *Drying Issues and Process Scale up of Solvent Casted Films for Flat Panel Displays and Organic Electronics*, 14th International Coating Science and Technology Symposium der ISCST, 7.-10. September, Marina del Rey CA, USA (Talk)
- [18] **P. Scharfer**, Y. Zhou, J. Krenn, M. Kind, W. Schabel (2008). *Influence of local gas phase mass transport coefficients on the drying rate of polymer films – a fundamental study*, 14th International Coating Science and Technology Symposium der ISCST, 7.-10. September, Marina del Rey CA, USA (Poster)
- [17] J. Krenn, **P. Scharfer**, W. Schabel, M. Kind (2007). *Oberflächenstrukturen bei dünnen Polymerfilmen aufgrund von Marangoni-Konvektion während der Trocknung*, Fachausschuss Trocknungstechnik, Jena, 5.-7. März (Poster)
- [16] J. Krenn, **P. Scharfer**, W. Schabel, M. Kind (2007). *Drying of solvent-borne coatings with pre-loaded drying gas*, 7th European Coating Symposium ECS, 12.-14. September, Paris (Poster)
- [15] **P. Scharfer**, W. Schabel, M. Kind (2007). *Simulation to design technical film drying processes*, 7th European Coating Symposium ECS, 12.-14. September, Paris (Poster)

- [14] **P. Scharfer**, W. Schabel, M. Kind (2007). *Untersuchungen zum Einfluss des Protonentransports auf den Stofftransport von Wasser und Alkohol in Nafion[®]-Membranen*, ProcessNet Jahrestagung, Aachen, 7.-9. März (Poster)
- [13] **P. Scharfer**, W. Schabel, M. Kind (2007). *Untersuchungen zum Einfluss des Protonentransports auf den Stofftransport von Wasser und Alkohol in Nafion[®]-Membranen*, Fachausschuss Wärme- und Stoffübertragung, Stuttgart, 7.-9. März (Poster)
- [12] **P. Scharfer**, W. Schabel, M. Kind (2007). *Untersuchungen zum Einfluss des Protonentransports auf den Stofftransport von Wasser und Alkohol in Nafion[®]-Membranen*, Fachausschuss Energieverfahrenstechnik, Wiesbaden, 26.-27. Februar (Talk)
- [11] **P. Scharfer**, W. Schabel, M. Kind (2006). *Simulation to design technical film drying processes*, 13th International Coating Science and Technology Symposium der ISCST, 9.-13. September, Denver, USA (Poster)
- [10] **P. Scharfer**, J. Krenn, W. Schabel, M. Kind (2006). *Investigation of methanol diffusion in Nafion[®]-membranes for direct methanol fuel cells by means of Inverse Micro Raman Spectroscopy*, 13th International Heat Transfer Conference, Sydney, 13.-18. August (Poster)
- [9] **P. Scharfer**, J. Krenn, W. Schabel, M. Kind (2006). *Untersuchungen zum Stofftransport von Wasser und Methanol in Nafion[®] 115 mit Hilfe der Inversen-Mikro-Raman-Spektroskopie (IMRS)*, Fachausschuss Wärme- und Stoffübertragung, Frankfurt, 6.-8. März (Poster)
- [8] **P. Scharfer**, J. Krenn, W. Schabel, M. Kind (2006). *Untersuchungen zum Stofftransport von Wasser und Methanol in Nafion[®] 115 mit Hilfe der Inversen-Mikro-Raman-Spektroskopie (IMRS)*, Fachausschuss Energieverfahrenstechnik, Wiesbaden, 20.-21. Februar (Talk)
- [7] M. Müller, **P. Scharfer**, W. Schabel, M. Kind (2005). *Untersuchung des Trocknungsprozesses zur Herstellung pharmazeutischer Wirkstoffpflaster und Entwicklung eines Online-Feuchtesensors*, GVC-Jahrestagung, Wiesbaden, 6.-8. September (Poster)
- [6] M. Müller, **P. Scharfer**, W. Schabel, M. Kind (2005). *Über die Untersuchung des Trocknungsprozesses zur Herstellung pharmazeutischer Wirkstoffpflaster*, Fachausschuss Trocknungstechnik, 9.-11. März, Dresden (Poster)
- [5] W. Schabel, **P. Scharfer**, M. Kind (2005). *Feuchtemessungen mit Hilfe der Raman-spektroskopie und die Modellierung von Filmtrocknungsprozessen*, Fachausschuss Trocknungstechnik, 9.-11. März, Dresden (Talk)
- [4] **P. Scharfer**, W. Schabel, M. Kind (2005). *Phasengleichgewichts- und Diffusionskoeffizientenmessung in vernetzten Polymeren mit Hilfe der Inversen-Mikro-Raman-Spektroskopie (IMRS)*, Fachausschuss Wärme- und Stoffübertragung, Jena, 8.-9. März (Poster)
- [3] **P. Scharfer**, W. Schabel, M. Kind (2005). *Untersuchung von Stofftransportvorgängen in Direkt-Methanol-Brennstoffzellen (DMFC) mit Hilfe der Inversen-Mikro-Raman-Spektroskopie (IMRS) - Erste Vorversuche*, Fachausschuss Energieverfahrenstechnik, Bad Herrenalb, 7.-9. März (Talk)

- [2] M. Müller, **P. Scharfer**, W. Schabel, M. Kind (2004). *Investigation of Transdermal Patches using Confocal-Micro-Raman-Spectroscopy*, Proc. International Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, Nürnberg, 15.-18. März (Talk)
- [1] W. Schabel, **P. Scharfer**, M. Kind (2003). *Messung und Simulation von Konzentrationsprofilen bei der Trocknung von dünnen Filmen mit Hilfe der Konfokalen-Mikro-Raman-Spektroskopie*, GVC-Jahrestagung, Mannheim, 16.-18. September (Talk)

Invited Talks and oral Presentations

- [23] **KIT** Symposium, Competence Field of Applied Materials, **11/2010**
- [22] **Würth Solar** meets KIT, Research Presentation, Karlsruhe, **10/2010**
- [21] **Evonik**, Symposium and Networking Workshop, Invited Talk, Marl, **03/2010**
- [20] **Krönert**, Research Presentation, Hamburg, **03/2010**
- [19] **LSTM**, Short Course on Coating and Drying, Erlangen, **02/2010**
- [18] **Ilford Imaging**, Short Course on Coating and Drying, Fribourg, Switzerland, **11/2009**
- [17] **ECS 2009**, Short Course on Coating and Drying, Karlsruhe, **09/2009**
- [16] **Coatema Int.** Coating Symposium, Invited Talk, Dormagen, **10/2009**
- [15] **KIT**, Inst. Technische Chemie - Polymerchemie, Kolloquium-Talk, **06/2009**
- [14] **Procter & Gamble**, Research Presentation, Cincinnati, USA, **03/2009**
- [13] **Holst Centre**, Research Presentation, Eindhoven, **11/2008**
- [12] **BASF AG**, Research Presentation, Ludwigshafen, **04/2008**
- [11] **MERCK Chemicals**, Research Presentation, Frankfurt am Main, **04/2008**
- [10] **BASF Coatings**, Research Presentation, Münster, **10/2007**
- [9] **DFG SPP 1259 „Intelligente Hydrogele“**, Research Workshop, **03/2007**
- [8] **ISCST**, Short Course on Drying - Fundamentals, Denver, USA, **09/2006**
- [7] **Freudenberg**, Freudenberg-Forschungs-Kolloquium, Weinheim, **07/2006**
- [6] **MPI**, Invited Talk, Magdeburg, **06/2006**
- [5] **DLR**, Invited Talk, Stuttgart, **03/2006**
- [4] **Ilford Imaging**, Short Course on Drying, Fribourg, Switzerland, **11/2005**
- [3] **Forbo Helmitin**, Research Presentation, Pirmasens, **06/2005**
- [2] **Fraunhofer Institut ISE**, Research Presentation, Freiburg, **06/2005**
- [1] **DECHEMA-Kolloquium** „Trocknung dünner Filme“, Frankfurt am Main, **11/2004**