

Light-fuelled freestyle self-oscillators

Zeng, H., Lahikainen, M., Liu, L., Ahmed, Z., Wani, O. M., Wang, M., Yang, H. & Priimagi, A., 7 Nov 2019, In : Nature Communications. 10, 1, 5057.

Research output: Contribution to journal > Article > Scientific > peer-review

Electronic couplings and rates of excited state charge transfer processes at poly(thiophene-co-quinoxaline)-PC71BM interfaces: two- versus multi-state treatments

Kastinen, T., da Silva Filho, D. A., Paunonen, L., Linares, M., Ribeiro Junior, L. A., Cramariuc, O. & Hukka, T. I., 1 Nov 2019, In : Physical Chemistry Chemical Physics.

Research output: Contribution to journal > Article > Scientific > peer-review

Chemical Dissolution of Pt(111) During Potential Cycling Under Negative pH Conditions Studied by Operando X-ray Photoelectron Spectroscopy

Ali-Löytty, H., Valden, M., Hannula, M., Eilert, A., Ogasawara, H. & Nilsson, A., 25 Sep 2019, In : Journal of Physical Chemistry C. 123, 41, p. 25128-25134

Research output: Contribution to journal > Article > Scientific > peer-review

Pinacol-Derived Chlorohydrosilane in Metal-Free Reductive Amination for the Preparation of Tertiary Alkylphenolmethyl Amines

Assoah, B., Veiros, L. F. & R. Candeias, N., 15 Feb 2019, In : Organic Letters. 21, 5, p. 1402-1406 5 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Microstructure-property relationships of novel ultra-high strength press hardening steels

Järvinen, H., Honkanen, M., Oja, O., Järvenpää, M. & Peura, P., 2019, In : Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science. 50, 2, p. 816-836 21 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Titanium oxide based nanoparticles by laser ablation in supercritical carbon dioxide

Levänen, E. & Singh, A., Aug 2018.

Research output: Other conference contribution > Paper, poster or abstract > Scientific

Utilization of CO2 in modification of galvanized steel surface

Nikkanen, J-P., Kaleva, A., Saarimaa, V., Honkanen, M., Vuorinen, T., Heinonen, S., Väisänen, P., Markkula, A., Huttunen-Saarivirta, E. & Levänen, E., 19 Jun 2018.

Research output: Other conference contribution > Paper, poster or abstract > Scientific

Composite Hydrogels Using Bioinspired Approach with in Situ Fast Gelation and Self-Healing Ability as Future Injectable Biomaterial

Khan, M., Koivisto, J., Hukka, T., Hokka, M. & Kellomäki, M., 11 Apr 2018, In : ACS Applied Materials & Interfaces. 10, 14, p. 11950-11960

Research output: Contribution to journal > Article > Scientific > peer-review

Economic analysis of hydrogen production by methane thermal decomposition: Comparison to competing technologies

Keipi, T., Tolvanen, H. & Konttinen, J., 1 Mar 2018, In : Energy Conversion and Management. 159, p. 264-273 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Entrapped Styrene Butadiene Polymer Chains by Sol-Gel-Derived Silica Nanoparticles with Hierarchical Raspberry Structures

Vaikuntam, S. R., Stöckelhuber, K. W., Subramani Bhagavatheswaran, E., Wießner, S., Scheler, U., Saalwächter, K., Formanek, P., Heinrich, G. & Das, A., 15 Feb 2018, In : Journal of Physical Chemistry B. 122, 6, p. 2010-2022 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Convenient extraction method for quantification of thin zinc patina layers

Saarimaa, V., Kaleva, A., Paunikallio, T., Nikkanen, J-P., Heinonen, S., Levänen, E., Väisänen, P. & Markkula, A., 2018, In : Surface and Interface Analysis. 50, 5, p. 564-570

Research output: Contribution to journal > Article > Scientific > peer-review

Valorization of Finnish mining tailings for use in the ceramics industry

Solismaa, S., Ismailov, A., Karhu, M., Sreenivasan, H., Lehtonen, M., Kinnunen, P., Illikainen, M. & Räsänen, M-L., 2018, In : BULLETIN OF THE GEOLOGICAL SOCIETY OF FINLAND. 90, 1, p. 33-54

Research output: Contribution to journal › Article › Scientific › peer-review

Noncovalent functionalization of reduced graphene oxide with pluronic F127 and its nanocomposites with gum arabic

Layek, R. K., Uddin, M. E., Kim, N. H., Tak Lau, A. K. & Lee, J. H., 1 Nov 2017, In : Composites Part B : Engineering. 128, p. 155-163 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Methane thermal decomposition in regenerative heat exchanger reactor: Experimental and modeling study

Keipi, T., Li, T., Løvås, T., Tolvanen, H. & Konttinen, J., 15 Sep 2017, In : Energy. 135, p. 823-832

Research output: Contribution to journal › Article › Scientific › peer-review

Engineering and Characterization of Bacterial Nanocellulose Films as Low Cost and Flexible Sensor Material

Mangayil, R., Rajala, S., Pammo, A., Sarlin, E., Luo, J., Santala, V., Karp, M. & Tuukkanen, S., 2017, In : ACS Applied Materials & Interfaces. 9, 22, p. 19048–19056 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

On the effect of deformation twinning and microstructure to strain hardening of high manganese austenitic steel 3D microstructure aggregates at large strains

Lindroos, M., Laukkanen, A., Cailletaud, G. & Kuokkala, V-T., 2017, In : International Journal of Solids and Structures. 125, p. 68-76

Research output: Contribution to journal › Article › Scientific › peer-review

Tailored Fabrication of Transferable and Hollow Weblike Titanium Dioxide Structures

Hiltunen, A., Lahtonen, K., Saari, J., Ojanperä, A., Sarlin, E., Wondraczek, H., Efimov, A., Kaunisto, K., Vivo, P., Maccato, C., Barreca, D., Fardim, P., Tkachenko, N., Valden, M. & Lemmetyinen, H., 2017, In : ChemPhysChem. 18, p. 64-71 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Characterization of endoglucanase rich Trichoderma reesei cellulase mixtures and their effect on alkaline solubility of dissolving pulp

Kamppuri, T., Vehviläinen, M., Backfolk, K. & Heiskanen, I., Dec 2016, In : Cellulose. 23, 6, p. 3901–3911 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Photocatalytic and antibacterial properties of ZnO films with different surface topographies on stainless steel substrate

Heinonen, S., Kannisto, M., Nikkanen, J-P., Huttunen-Saarivirta, E., Karp, M. & Levänen, E., 1 Oct 2016, In : Thin Solid Films. 616, p. 842-849 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Thermo-catalytic decomposition of methane: The effect of reaction parameters on process design and the utilization possibilities of the produced carbon

Keipi, T., Tolvanen, K. E. S., Tolvanen, H. & Konttinen, J., Oct 2016, In : Energy Conversion and Management. 126, p. 923-934 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Sustainable nutrients recovery and recycling by optimizing the chemical addition sequence for struvite precipitation from raw swine slurries

Taddeo, R., Kolppo, K. & Lepistö, R., 15 Sep 2016, In : Journal of Environmental Management. 180, p. 52-58 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Improving Recovery Boiler Availability through Understanding Fume Behavior

Leppänen, A. & Välimäki, E., Mar 2016, In : TAPPI Journal. 15, 3, p. 187-193

Research output: Contribution to journal › Article › Scientific › peer-review

Machine-coated starch-based dispersion coatings prevent mineral oil migration from paperboard

Koivula, H. M., Jalkanen, L., Saukkonen, E., Ovaska, S-S., Lahti, J., Christophliemk, H. & Mikkonen, K. S., 2016, In : Progress in Organic Coatings. 99, p. 173-181

Research output: Contribution to journal > Article > Scientific > peer-review

Remarkable Dependence of the Final Charge Separation Efficiency on the Donor-Acceptor Interaction in Photoinduced Electron Transfer

Higashino, T., Yamada, T., Yamamoto, M., Furube, A., Tkachenko, N. V., Miura, T., Kobori, Y., Jono, R., Yamashita, K. & Imahori, H., 2016, In : Angewandte Chemie (International Edition). 55, 2, p. 629-633

Research output: Contribution to journal > Article > Scientific > peer-review

Techno-economic analysis of four concepts for thermal decomposition of methane: Reduction of CO₂ emissions in natural gas combustion

Keipi, T., Hankalin, V., Nummelin, J. & Raiko, R., 2016, In : Energy Conversion and Management. 110, p. 1-12

Research output: Contribution to journal > Article > Scientific > peer-review

Towards material excellence: Evaluation of Tekes' programmes on materials

Timonen, J., Antikainen, M., Das, A., Sarlin, E. & Vuorinen, J., 2016, Tekes. 61 p.

Research output: Book/Report > Commissioned report > Professional

Corrosion products of carbonation induced corrosion in existing reinforced concrete facades

Köliö, A., Honkanen, M., Lahdensivu, J., Vippola, M. & Pentti, M., Dec 2015, In : Cement and Concrete Research. 78, p. 200-207 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Enhanced pre-treatment of cellulose pulp prior to dissolution into NaOH/ZnO

Grönqvist, S., Kamppuri, T., Maloney, T., Vehviläinen, M., Liittä, T. & Suurnäkki, A., Dec 2015, In : Cellulose. 22, 6, p. 3981-3990 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Cracking resistance of Cr₃C₂-NiCr and WC-Cr₃C₂-Ni thermally sprayed coatings under tensile bending stress

Mayrhofer, E., Janka, L., Mayr, W. P., Norpoth, J., Rodriguez Ripoll, M. & Gröschl, M., 15 Nov 2015, In : Surface and Coatings Technology. 281, p. 169-175 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The Effect of Phosphorus Exposure on Diesel Oxidation Catalysts-Part I: Activity Measurements, Elementary and Surface Analyses

Kärkkäinen, M., Kolli, T., Honkanen, M., Heikkinen, O., Huuhtanen, M., Kallinen, K., Lepistö, T., Lahtinen, J., Vippola, M. & Keiski, R. L., Oct 2015, In : Topics in Catalysis. 58, 14, p. 961-970 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The Effect of Phosphorus Exposure on Diesel Oxidation Catalysts-Part II: Characterization of Structural Changes by Transmission Electron Microscopy

Honkanen, M., Kärkkäinen, M., Heikkinen, O., Kallinen, K., Kolli, T., Huuhtanen, M., Lahtinen, J., Keiski, R. L., Lepistö, T. & Vippola, M., Oct 2015, In : Topics in Catalysis. 58, 14, p. 971-976 6 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Coating of Silica and Titania Aerosol Nanoparticles by Silver Vapor Condensation

Harra, J., Juuti, P., Haapanen, J., Sorvali, M., Roumeli, E., Honkanen, M., Vippola, M., Yli-Ojanperä, J. & Mäkelä, J. M., 2 Sep 2015, In : Aerosol Science and Technology. 49, 9, p. 767-776 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Measuring synthesis yield in graphene oxide synthesis by modified hummers method

Frankberg, E. J., George, L., Efimov, A., Honkanen, M., Pessi, J. & Levänen, E., 2 Sep 2015, In : Fullerenes Nanotubes and Carbon Nanostructures. 23, 9, p. 755-759 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Electrospun Black Titania Nanofibers: Influence of Hydrogen Plasma-Induced Disorder on the Electronic Structure and Photoelectrochemical Performance

Lepcha, A., Maccato, C., Mettenbörger, A., Andreu, T., Mayrhofer, L., Walter, M., Olthof, S., Ruoko, T. P., Klein, A., Moseler, M., Meerholz, K., Morante, J. R., Barreca, D. & Mathur, S., 20 Aug 2015, In : *Journal of Physical Chemistry C*. 119, 33, p. 18835-18842 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Low temperature temporal and spatial atomic layer deposition of TiO₂ films

Aghaee, M., Maydannik, P. S., Johansson, P., Kuusipalo, J., Creatore, M., Homola, T. & Cameron, D. C., Jul 2015, In : *Journal of Vacuum Science & Technology A*. 33, 4, 9 p., 041512.

Research output: Contribution to journal › Article › Scientific › peer-review

Dissolution of enzyme-treated cellulose using freezing thawing method and the properties of fibres regenerated from the solution

Vehviläinen, M., Kamppuri, T., Grönqvist, S., Rissanen, M., Maloney, T., Honkanen, M. & Nousiainen, P., Jun 2015, In : *Cellulose*. 22, 3, p. 1653-1674 22 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Impact of mechanical and enzymatic pretreatments on softwood pulp fiber wall structure studied with NMR spectroscopy and X-ray scattering

Virtanen, T., Penttilä, P. A., Maloney, T. C., Grönqvist, S., Kamppuri, T., Vehviläinen, M., Serimaa, R. & Maunu, S. L., Jun 2015, In : *Cellulose*. 22, 3, p. 1565-1576 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

High temperature oxidation tests for the high velocity solution precursor flame sprayed manganese-cobalt oxide spinel protective coatings on SOFC interconnector steel

Puranen, J., Laakso, J., Honkanen, M., Heinonen, S., Kylmälahti, M., Lugowski, S., Coyle, T. W., Kesler, O. & Vuoristo, P., 18 May 2015, In : *International Journal of Hydrogen Energy*. 40, 18, p. 6216-6227 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Preferential Attachments of Organic Dyes onto {101} Facets of TiO₂ Nanoparticles

Diao, F., Liang, W., Tian, F., Wang, Y., Vivo, P., Efimov, A. & Lemmetyinen, H., 23 Apr 2015, In : *Journal of Physical Chemistry C*. 119, 16, p. 8960-8965 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Fermentative metabolism of an anaerobic, thermophilic consortium on plant polymers and commercial paper samples

Carver, S. M., Nelson, M. C., Yu, Z. & Tuovinen, O. H., 1 Apr 2015, In : *Biomass & Bioenergy*. 75, p. 11-22 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Effect of rheological properties of dissolved cellulose/microfibrillated cellulose blend suspensions on film forming

Saarikoski, E., Rissanen, M. & Seppälä, J., 30 Mar 2015, In : *Carbohydrate Polymers*. 119, p. 62-70 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Modeling Fume Particle Dynamics and Deposition with Alkali Metal Chemistry in Kraft Recovery Boilers

Leppänen, A., 9 Jan 2015, Tampere: Tampere University of Technology. 63 p. (Tampere University of Technology. Publication; vol. 1273)

Research output: Book/Report › Doctoral thesis › Collection of Articles

Perfluoro-1,1'-biphenyl and perfluoronaphthalene and their derivatives as π -acceptors for anions

Yi, H., Albrecht, M., Valkonen, A. & Rissanen, K., 1 Jan 2015, In : *New Journal of Chemistry*. 39, 1, p. 746-749 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

High performance wear and corrosion resistant coatings by novel cladding techniques

Tuominen, J., Näkki, J., Pajukoski, H., Nyyssönen, T., Ristonen, T., Peltola, T. & Vuoristo, P., Jan 2015, *Surface Modification Technologies XXVIII: Proceedings of the 28th International Conference on Surface Modification*

Technologies. Sudarshan, T. S., Vuoristo, P. & Koivuluoto, H. (eds.). Valardocs, p. 105-117 13 p.
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Corrosion propagation phase studies on Finnish reinforced concrete facades

Köliö, A., Honkanen, M. & Lahdensivu, J., 2015, *1st International Symposium on Building Pathology: ISBP 2015*. Porto: FEUP Edicoes (Faculdade de Engenharia da Universidade do Porto Edicoes)

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Diffusion of acidic solution through rubber at high temperature and its effect on metal-rubber interface degradation

Sarlin, E., Rosling, A., Mustakangas, M., Laihonon, P., Lindgren, M. & Vuorinen, J., 2015, *Proceedings of SAMPE Europe Conference*.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

Effect of alkali and silane surface treatments on regenerated cellulose fibre type (Lyocell) intended for composites

Ramamoorthy, S. K., Skrifvars, M. & Rissanen, M., 2015, In : *Cellulose*. 22, 1, p. 637-654 18 p.

Research output: Contribution to journal › Article › Scientific › peer-review

From partial to complete optical erasure of azobenzene-polymer gratings: effect of molecular weight

Vapaavuori, J., Ras, R. H. A., Kaivola, M., Bazuin, C. G. & Priimägi, A., 2015, In : *Journal of Materials Chemistry C*. 3, 42, p. 11011-11016 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

High-temperature slurry erosion of vinylester matrix composites – The effect of test parameters

Sarlin, E. L., Lindgren, M., Suihkonen, R. J., Siljander, S. M. K., Kakkonen, M. M. S. & Vuorinen, J. E., 2015, In : *Wear*. 328-329, p. 488-497 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

N-Alkyl ammonium resorcinarene salts: multivalent halogen-bonded deep-cavity cavitands

Beyeh, N. K., Valkonen, A., Bhowmik, S., Pan, F. & Rissanen, K., 2015, In : *Organic chemistry frontiers*. 2, 4, p. 340-345 6 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Research on icing behavior and ice adhesion testing of icephobic surfaces

Koivuluoto, H., Stenroos, C., Ruohomaa, R., Bolelli, G., Lusvarghi, L. & Vuoristo, P., 2015, *16th International Workshop on Atmospheric Icing of Structures, IWAIS 2015, June 28-July 3, 2015, Uppsala, Sweden*. p. 183-188 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

Simulation of ash-forming compounds in the kraft recovery boiler

Leppänen, A., Välimäki, E. & Oksanen, A., 2015, *10th European Conference on Industrial Furnaces and Boilers*. Porto, Portugal, 10 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Synthesis, crystal structure, spectral, dielectric characteristics and conduction mechanism of two novel carboxylates of 1-benzhydrylpiperazine

Wacharine, I., Valkonen, A., Rzaigui, M. & Smirani, W., 2015, In : *Monatshefte für Chemie*. 146, 12, p. 2007-2020 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The effect of physical adhesion promotion treatments on interfacial adhesion in cellulose-epoxy composite

Siljander, S., Lehmonen, J., Tanaka, A., Ketoja, J., Heikkilä, P., Lahti, J., Sarlin, E. & Vuorinen, J., 2015, *Proceedings of the 20th International Conference on Composite Materials*. 10 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Professional

The effect of the outermost fibre layers on solubility of dissolving grade pulp

Grönqvist, S., Treimanis, A., Kamppuri, T., Maloney, T., Skute, M., Grinfelds, U., Vehviläinen, M. & Suurnäkki, A., 2015, In : *Cellulose*. 22, 6, p. 3955-3965 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Numerical modeling of fine particle and deposit formation in a recovery boiler

Leppänen, A., Tran, H., Taipale, R., Välimäki, E. & Oksanen, A., 1 Aug 2014, In : *Fuel*. 129, p. 45-53 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Creation of superhydrophilic surfaces of paper and board

Tuominen, M., Teisala, H., Aromaa, M., Stepien, M., Mäkelä, J. M., Saarinen, J. J., Toivakka, M. & Kuusipalo, J., 2014, In : *Journal of Adhesion Science and Technology*. 28, 8-9, p. 864-879

Research output: Contribution to journal > Article > Scientific > peer-review

Design driven world of cellulose-from bulk to luxury?

Qvintus, P., Kataja, K., Heikkilä, P., Salmela, J., Lehmonen, J., Ketoja, J., Hänninen, T., Harlin, A., Härkäsalmi, T., Vuorinen, J. & Vuorinen, T., 2014, *Fibre Value Chain Conference and Expo 2014: Pulp and Paper Bioenergy Bioproducts*. Appita Inc., p. 67-74 8 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Improving the extensibility, wet web and dry strength of paper by addition of agar

Vishtal, A. & Retulainen, E., 2014, In : *Nordic Pulp and Paper Research Journal*. 29, 3, p. 434-443 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Modelling fume deposit growth in recovery boilers: effect of flue gas and deposit temperature

Leppänen, A., Tran, H., Välimäki, E. & Oksanen, A., 2014, In : *Journal of Science and Technology for Forest Products and Processes*. 4, 1, p. 50-57 8 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The effects of UV irradiation to polyetheretherketone fibres: Characterization by different techniques

Mylläri, V., Ruoko, T. P. & Järvelä, P., 2014, In : *Polymer Degradation and Stability*. 109, p. 278-284 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

High- and low-adhesive superhydrophobicity on the liquid flame spray-coated board and paper: structural effects on surface wetting and transition between the low- and high-adhesive states

Teisala, H., Tuominen, M., Aromaa, M., Stepien, M., Mäkelä, J. M., Saarinen, J. J., Toivakka, M. & Kuusipalo, J., 2013, In : *Colloid and Polymer Science*. 291, 2, p. 447-455

Research output: Contribution to journal > Article > Scientific > peer-review

The effect of flame treatment on surface properties and heat sealability of low-density polyethylene coating

Tuominen, M., Ek, M., Saloranta, P., Toivakka, M. & Kuusipalo, J., 2013, In : *Packaging Technology and Science*. 26, 4, p. 201-214

Research output: Contribution to journal > Article > Scientific > peer-review

Wettability conversion on the liquid flame spray generated superhydrophobic TiO₂ nanoparticle coating on paper and board by photocatalytic decomposition of spontaneously accumulated carbonaceous overlayer

Teisala, H., Tuominen, M., Stepien, M., Haapanen, J., Mäkelä, J. M., Saarinen, J. J., Toivakka, M. & Kuusipalo, J., 2013, In : *Cellulose*. 20, 1, p. 391-408

Research output: Contribution to journal > Article > Scientific > peer-review

Adhesion of Extrusion-Coated Polymer Sealing Layers to a Fiber-Based Packaging Material with an Atomic Layer Deposited Aluminum Oxide Surface Coating

Lahtinen, K., Johansson, P., Kääriäinen, T. & Cameron, D. C., 2012, In : *Polymer Engineering and Science*. 52, 9, p. 1985-1990

Research output: Contribution to journal > Article > Scientific > peer-review

Atmospheric synthesis of superhydrophobic TiO₂ nanoparticle deposits in a single step using Liquid Flame Spray

Aromaa, M., Arffman, A., Suhonen, H., Haapanen, J., Keskinen, J., Honkanen, M., Nikkanen, J-P., Levänen, E., Messing, M., Deppert, K., Teisala, H., Tuominen, M., Kuusipalo, J., Stepien, M., Saarinen, J., Toivakka, M. & Mäkelä, J. M., 2012, In : *Journal of Aerosol Science*. 52, p. 57-68

Research output: Contribution to journal › Article › Scientific › peer-review

Flame deposition of superhydrophobic and superhydrophilic nanoparticle coating on paperboard materials

Aromaa, M., Haapanen, J., Teisala, H., Tuominen, M., Kuusipalo, J., Stepien, M., Saarinen, J. J., Toivakka, M. & Mäkelä, J. M., 2012, *Nanotechnology 2012: Advanced Materials, CNTs, Particles, Films and Composites - 2012 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech 2012, Santa Clara, CA, USA, 18-21 June 2012*. Nano Science and Technology Institute NSTI, p. 365-367 (Nanotechnology Conference and Expo Nanotech).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Nanoscale surface processing of extrusion coated substrates and plastic films with atmospheric plasma activation and deposition

Lahti, J. & Lavonen, J., 2012, *TAPPI PLACE Conference 2012, Helping Me Do My Job Better, Seattle, Washington, USA, 6-9 May 2012*. TAPPI Press; Curran Associates, Inc, p. 588-600 (TAPPI PLACE Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Nanostructures Increase Water Droplet Adhesion on Hierarchically Rough Superhydrophobic Surfaces

Teisala, H., Tuominen, M., Aromaa, M., Stepien, M., Mäkelä, J. M., Saarinen, J. J., Toivakka, M. & Kuusipalo, J., 2012, In : *Langmuir*. 28, 6, p. 3138-3145

Research output: Contribution to journal › Article › Scientific › peer-review

Surface chemical analysis of photocatalytic wettability conversion of TiO₂ nanoparticle coating

Stepien, M., Saarinen, J. J., Teisala, H., Tuominen, M., Aromaa, M., Kuusipalo, J., Mäkelä, J. M. & Toivakka, M., 2012, In : *Surface and Coatings Technology*. 208, p. 73-79

Research output: Contribution to journal › Article › Scientific › peer-review

Surface chemical characterization of nanoparticle coated paperboard

Stepien, M., Saarinen, J. J., Teisala, H., Tuominen, M., Aromaa, M., Kuusipalo, J., Mäkelä, J. M. & Toivakka, M., 2012, In : *Applied Surface Science*. 258, 7, p. 3119-3125

Research output: Contribution to journal › Article › Scientific › peer-review

The Effect of ELF electric fields on Implantable Cardioverter Defibrillators (ICD)

Gonzalez, J. A., Tarao, H. & Korpinen, L., 2012, *The Bioelectromagnetics Society 34th Annual Meeting, June 17, 2012 - June 22, 2012, Brisbane, Australia*. The Bioelectromagnetics Society, p. 104-106 3 p. (The Bioelectromagnetics Society Annual Meeting).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

The effects of coating structure and water-holding capacity on the oxygen-scavenging capacity of enzymes embedded in the coating layer

Johansson, K., Christophliemk, H., Johansson, C., Jönsson, L. J. & Järnström, L., 2012, *12th TAPPI Advanced Coating Fundamentals Symposium Proceedings, September 10-12, 2012, Atlanta, USA*. TAPPI, p. 57-69 (TAPPI Advanced Coating Fundamentals Symposium).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Top layer coatability on barrier coatings

Bollström, R., Tuominen, M., Määttänen, A., Peltonen, J. & Toivakka, M., 2012, In : *Progress in Organic Coatings*. 73, 1, p. 26-32

Research output: Contribution to journal › Article › Scientific › peer-review

Toward more controlled, nanoscale barrier layers in packaging

Lahtinen, K., Johansson, P., Kääriäinen, T., Maydannik, P., Cameron, D. & Kuusipalo, J., 2012, In : *Plastics Research Online*. 17th August, p. 1-3 3 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Two-component aerosol nanoparticle coating for paperboard on roll-to-roll process

Haapanen, J., Aromaa, M., Teisala, H., Tuominen, M., Stepien, M., Saarinen, J. J., Toivakka, M., Kuusipalo, J. & Mäkelä, J. M., 2012, *EAC-2012 Granada, European Aerosol Conference, 2-7 Sept 2012, Granada, Spain*. EAA, AECTA, p. 1-1 1 p. (European Aerosol Conference EAC).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

Adhesion Mechanism of Water Droplets on Hierarchically Rough Superhydrophobic Rose Petal Surface

Teisala, H., Tuominen, M. & Kuusipalo, J., 2011, In : *Journal of Nanomaterials*. 2011, p. 1-6 6 p., 818707.

Research output: Contribution to journal › Article › Scientific › peer-review

Atmospheric Plasma Treatment of Plastic Packaging Film: Effects on Surface Properties and UV Inkjet Printability

Lahti, J., Eiroma, K., Tenhunen, T.-M., Pykönen, M., Toivakka, M. & Tuominen, M., 2011, *13th TAPPI European PLACE Conference, Bregenz, Austria, 30 May - 1 June, 2011*. Norcross, GA: TAPPI, p. 1-31 31 p. (TAPPI European PLACE Conference).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Atomic layer deposition on polymer based flexible packaging materials: Growth characteristics and diffusion barrier properties

Kääriäinen, T. O., Maydannik, P., Cameron, D. C., Lahtinen, K., Johansson, P. & Kuusipalo, J., 2011, In : *Thin Solid Films*. 519, 10, p. 3146-3154

Research output: Contribution to journal › Article › Scientific › peer-review

Deposition of flame synthesised nanoparticles on paperboard surface

Aromaa, M., Haapanen, J., Teisala, H., Tuominen, M., Kuusipalo, J., Stepien, M., Saarinen, J. J., Toivakka, M. & Mäkelä, J., 2011, *NOSA & FAAR 2011, Nordic Aerosol Symposium, November 9-11, 2011, Tampere, Finland*. Tampere: Nordic Society for Aerosol Research, p. 17-17 (Nordic Aerosol Symposium NOSA & FAAR).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

Effects of flame and corona treatment on extrusion coated paper properties

Tuominen, M., Lahti, J. & Kuusipalo, J., 2011, In : *TAPPI Journal*. 10, 10, p. 29-36

Research output: Contribution to journal › Article › Scientific › peer-review

Nanoparticle Deposition from Liquid Flame Spray onto Moving Roll-to-Roll Paperboard Material

Mäkelä, J. M., Aromaa, M., Teisala, H., Tuominen, M., Stepien, M., Saarinen, J. J., Toivakka, M. & Kuusipalo, J., 2011, In : *Aerosol Science and Technology*. 45, 7, p. 827-837

Research output: Contribution to journal › Article › Scientific › peer-review

Nanoscale Surface Processing of Extrusion Coated Substrates and Plastic Films with Atmospheric Plasma Activation and Deposition

Lahti, J. & Lavonen, J., 2011, *Novel nanostructured polymeric materials for food packaging and beyond, International COST Workshop, Espoo, Finland, September 15-16, 2011. VTT Symposium*. Vähä-Nissi, M. (ed.). Espoo: VTT, p. 29-30 (International COST Workshop; vol. 270).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

The name of the thesis: Atmospheric Plasma Treatment in Extrusion Coating, Topic: The Effect of Flame Treatment on the Sealability of Extrusion Coated Paper

Tuominen, M., 2011, *PaPSaT, International Doctoral Programme in Pulp and Paper Science and Technology in Finland, Yearbook 2011*. Kärkkäinen, S. (ed.). Espoo: Aalto University School of science and technology, p. 1-5 5 p.

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

Top layer coatability on barrier coatings

Bollström, R., Tuominen, M., Määttänen, A., Peltonen, J. & Toivakka, M., 2011, *TAPPI's PaperCon 2011, May 1-4, 2011, Covington, KY, USA. Paper 360 - Special PaperCon Edition*. Norcross, GA: TAPPI, p. 1-11 11 p. (TAPPI International Conference Papercon).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Utilisation of continuous atomic layer deposition process for barrier enhancement of extrusion-coated paper

Lahtinen, K., Maydannik, P., Johansson, P., Kääriäinen, T., Cameron, D. C. & Kuusipalo, J., 2011, In : *Surface and Coatings Technology*. 205, 15, p. 3916-3922

Research output: Contribution to journal › Article › Scientific › peer-review

Atomic layer deposition process for barrier applications of flexible packaging

Johansson, P., Lahtinen, K., Kuusipalo, J., Kääriäinen, T., Maydannik, P. & Cameron, D., 2010, *TAPPI 2010 PLACE Conference, April 18-21, 2010, Albuquerque NM, USA*. p. 1-12 12 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific

Bio-Hybrid Nanocomposite Coatings from Sonicated Chitosan and Nanoclay

Vartiainen, J., Tuominen, M. & Nättinen, K., 2010, In : *Journal of Applied Polymer Science*. 116, 6, p. 3638-3647

Research output: Contribution to journal > Article > Scientific > peer-review

Development of sustainable paper coatings using nanoscale industrial

Markert, F., Breedveld, L., Lahti, J. & Vangeneugden, D., 2010, *i-SUP 2010, Innovation for Sustainable Production, Conference 4, Materials for Sustainable Production, Bruges, Belgium, 18-21 April, 2010*. p. 80-84

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Digital imaging measurement of dense multiphase flows in industrial processes

Honkanen, M., Eloranta, H. & Saarenrinne, P., 2010, In : *Flow Measurement and Instrumentation*. 21, 1, p. 25-32

Research output: Contribution to journal > Article > Scientific > peer-review

Effect of fibre properties on flocculation and fractionation of cellulosic fibres in dry state

Larkomaa, J., Niinimäki, J., Honkanen, M., Hanif, M. & Saarenrinne, P., 2010, In : *Journal of Engineered Fibers and Fabrics*. 5, 1, p. 1-10 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Effect of Pigment Volume Concentration and Drying Aspects on the Enzyme Activity of Clay Coatings

Johansson, K., Christophliemk, H., Jönsson, L. J. & Järnström, L., 2010, *11th Advanced Coating Fundamentals Symposium Proceedings, The Latest Advances in Coating Research and Development, 11-13 October 2010, Munich, Germany*. USA: TAPPI Press, p. 129-143 (TAPPI Advanced Coating Fundamentals Symposium).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Image based measurement of particle phase reynolds stresses in a laboratory scale circulating fluidized bed

Peltola, J., Kallio, S., Honkanen, M. & Saarenrinne, P., 2010, *7th International Conference on Multiphase Flow ICMF2010, May 30 - June 4, 2010, Tampa, Florida*. p. 1-9 9 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Influence of Atmospheric Plasma Treatment on Surface Properties and Inkjet Printability of Plastic Packaging Film

Lahti, J., Eiroma, K., Tenhunen, T-M., Pykönen, M. & Toivakka, M., 2010, *Advances in Printing and Media Technology*. Enlund, N. & Lovrecek, M. (eds.). p. 197-203

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

The name of the thesis: Surface Treatment in Extrusion Coating, Topic: The Influence of Corona and Flame Treatment on Sealability of Extrusion Coated Paper

Tuominen, M., 2010, *PaPSaT, International Doctoral Programme in Pulp and Paper Science and Technology in Finland, Yearbook 2010*. Kärkkäinen, S. (ed.). p. 1-5 5 p.

Research output: Chapter in Book/Report/Conference proceeding > Chapter > Scientific > peer-review

Two-phase PIV/PTV measurement of bubbly flow across pin fins in a micro-channel

Honkanen, M., Jung, J., Kuo, C. J., Peles, Y. & Amitay, M., 2010, *7th International Conference on Multiphase Flow ICMF2010, May 30 - June 4, 2010, Tampa, Florida*. p. 1-9 9 p.

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review