

#### **Lubricated icephobic coatings prepared by flame spraying with hybrid feedstock injection**

Donadei, V., Koivuluoto, H., Sarlin, E. & Vuoristo, P., 15 Dec 2020, In : Surface and Coatings Technology. 403, 13 p., 126396.

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

#### **The effect of substrate pre-treatment on durability of rubber-stainless steel adhesion**

Sarlin, E., Honkanen, M., Lindgren, M., Laihonen, P., Juutilainen, M., Vippola, M. & Vuorinen, J., 1 Dec 2020, In : Surfaces and Interfaces. 21, 9 p., 100646.

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

#### **Avoiding the initial adhesive friction peak in fretting**

Juoksukangas, J., Hintikka, J., Lehtovaara, A., Mäntylä, A., Vaara, J. & Frondelius, T., 15 Nov 2020, In : Wear. 460-461, 12 p., 203353.

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

#### **Tribocorrosion behaviour of tin bronze CuSn12 under a sliding motion in NaCl containing environment: Contact to inert vs. reactive counterbody**

Huttunen-Saarivirta, E., Kilpi, L., Pasanen, A. T., Salminen, T. & Ronkainen, H., 1 Nov 2020, In : Tribology International. 151, 106389.

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

#### **Characteristics of carbide-free medium-carbon bainitic steels in high-stress abrasive wear conditions**

Haiko, O., Kaikkonen, P., Somani, M., Valtonen, K. & Kömi, J., 15 Sep 2020, In : Wear. 456-457, 12 p., 203386.

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

#### **Effect of prior austenite grain size on the abrasive wear resistance of ultra-high strength martensitic steels**

Haiko, O., Javaheri, V., Valtonen, K., Kaijalainen, A., Hannula, J. & Kömi, J., 15 Aug 2020, In : Wear. 454-455, 203336.

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

#### **On the alignment of ZnO nanowires by Langmuir – Blodgett technique for sensing application**

Baratto, C., Golovanova, V., Faglia, G., Hakola, H., Niemi, T., Tkachenko, N., Nazarchurk, B. & Golovanov, V., Jun 2020, In : Applied Surface Science. 528, 146959.

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

#### **Rotational Diffusion of Membrane Proteins in Crowded Membranes**

Javanainen, M., Ollila, O. H. S. & Martinez-Seara, H., 16 Apr 2020, In : Journal of Physical Chemistry B. 124, 15, p. 2994-3001 8 p.

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

#### **A study of Cr<sub>3</sub>C<sub>2</sub>-based HVOF- and HVAF-sprayed coatings: Abrasion, dry particle erosion and cavitation erosion resistance**

Matikainen, V., Koivuluoto, H. & Vuoristo, P., 15 Apr 2020, In : Wear. 446-447, 11 p., 203188.

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

#### **Transparent Yb<sup>3+</sup> doped phosphate glass-ceramics**

Hongisto, M., Veber, A., Boetti, N. G., Danto, S., Jubera, V. & Petit, L., 1 Jan 2020, In : Ceramics International.

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

#### **Cold gas spraying of a high-entropy CrFeNiMn equiatomic alloy**

Lehtonen, J., Koivuluoto, H., Ge, Y., Juselius, A. & Hannula, S. P., 2020, In : Coatings. 10, 1, 12 p., 53.

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

#### **Compounding and characterization of recycled multilayer plastic films**

Jönkkäri, I., Poliakova, V., Mylläri, V., Anderson, R., Andersson, M. & Vuorinen, J., 2020, In : Journal of Applied Polymer Science. 8 p., e49101.

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

**Hematite Surface Modification toward Efficient Sunlight-Driven Water Splitting Activity: The Role of Gold Nanoparticle Addition**

Tofanello, A., Freitas, A. L. M., Carvalho, W. M., Salminen, T., Niemi, T. & Souza, F. L., 2020, In : Journal of Physical Chemistry C.

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

**Influence of powder properties on residual stresses formed in high-pressure liquid fuel HVOF sprayed WC-CoCr coatings**

Varis, T., Suhonen, T., Jokipii, M. & Vuoristo, P., 2020, In : Surface and Coatings Technology. 388, 9 p., 125604.

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

**Ultrafast Photochemistry of the  $[\text{Cr}(\text{NCS})_6]^{3-}$  Complex in Dimethyl Sulfoxide and Dimethylformamide upon Excitation into Ligand-Field Electronic State**

Khvorost, T. A., Beliaev, L. Y., Potalueva, E., Laptenkova, A. V., Selyutin, A. A., Bogachev, N. A., Skripkin, M. Y., Ryazantsev, M. N., Tkachenko, N. & Mereshchenko, A. S., 2020, In : Journal of Physical Chemistry B. 124, 18, p. 3724-3733 10 p.

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

**Cold-Sprayed Al6061 coatings: Online spray monitoring and influence of process parameters on coating properties**

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

**Novel borosilicate bioactive scaffolds with persistent luminescence**

Del Cerro, P. R., Teittinen, H., Norrbo, I., Lastusaari, M., Massera, J. & Petit, L., 2020, In : Biomedical Glasses. 6, 1, p. 1-9 9 p.

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

**Evaluation of Residual Stresses and Their Influence on Cavitation Erosion Resistance of High Kinetic HVOF and HVAF-Sprayed WC-CoCr Coatings**

Varis, T., Suhonen, T., Laakso, J., Jokipii, M. & Vuoristo, P., 2020, In : Journal of Thermal Spray Technology. 17 p.

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

**Assessment of pitting corrosion in bare and passivated (wet  $\text{scCO}_2$ -induced patination and chemical passivation) hot-dip galvanized steel samples with SVET, FTIR, and SEM (EDS)**

Saarimaa, V., Fuertes, N., Persson, D., Zavalis, T., Kaleva, A., Nikkanen, J-P., Levänen, E. & Heydari, G., 2020, In : Materials and Corrosion. 10 p.

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

**Modification of Surface States of Hematite-Based Photoanodes by Submonolayer of  $\text{TiO}_2$  for Enhanced Solar Water Splitting**

Palmolahti, L., Ali-Löytty, H., Khan, R., Saari, J., Tkachenko, N. V. & Valden, M., 2020, In : Journal of Physical Chemistry C. 124, 24, p. 13094-13101 8 p.

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

**Energy dissipation in natural rubber latex films: The effect of stabilizers, leaching and acetone-treatment**

Shakun, A., Sarlin, E. & Vuorinen, J., 2020, In : Journal of Applied Polymer Science. 15 p.

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

**Luminescent  $(\text{Er},\text{Ho})_2\text{O}_3$  thin films by ALD to enhance the performance of silicon solar cells**

Ghazy, A., Safdar, M., Lastusaari, M., Aho, A., Tukiainen, A., Savin, H., Guina, M. & Karppinen, M., 2020, In : Solar Energy Materials and Solar Cells. 219, 5 p., 110787.

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

**Effect of tempering on the impact-abrasive and abrasive wear resistance of ultra-high strength steels**

Haiko, O., Valtonen, K., Kaijalainen, A., Uusikallio, S., Hannula, J., Liimatainen, T. & Kömi, J., 15 Dec 2019, In : Wear. 440-441

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

**Prediction of contact condition and surface damage by simulating variable friction coefficient and wear**

Mäntylä, A., Hintikka, J., Frondelius, T., Vaara, J., Lehtovaara, A. & Juoksukangas, J., 5 Nov 2019, In : Tribology International. 11 p., 106054.

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

**Running-in in fretting, transition from near-stable friction regime to gross sliding**

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

**Tribocorrosion behaviour of two low-alloy steel grades in simulated waste solution**

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**Detection of gaseous species during KCl-induced high-temperature corrosion by the means of CPFAAS and CI-API-TOF**

Lehmusto, J., Olin, M., Viljanen, J., Kalliokoski, J., Mylläri, F., Toivonen, J., Dal Maso, M. & Hupa, L., 30 Aug 2019, In : Materials and Corrosion. 10 p.

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**Characterizing the micro-impact fatigue behavior of APS and HVOF-sprayed ceramic coatings**

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**Magnetic non-contact friction from domain wall dynamics actuated by oscillatory mechanical motion**

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**Erosion wear performance of WC-10Co4Cr and Cr<sub>3</sub>C<sub>2</sub>-25NiCr coatings sprayed with high-velocity thermal spray processes**

Matikainen, V., Rubio Peregrina, S., Ojala, N., Koivuluoto, H., Schubert, J., Houdková & Vuoristo, P., 25 Jul 2019, In : Surface and Coatings Technology. 370, p. 196-212 17 p.

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**Characterization of cracks formed in large flat-on-flat fretting contact**

Juoksukangas, J., Nurmi, V., Hintikka, J., Vippola, M., Lehtovaara, A., Mäntylä, A., Vaara, J. & Frondelius, T., Jul 2019, In : International Journal of Fatigue. 124, p. 361-370 10 p.

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**Water-Responsive and Mechanically Adaptive Natural Rubber Composites by in Situ Modification of Mineral Filler Structures**

Banerjee, S. S., Hait, S., Natarajan, T. S., Wießner, S., Stöckelhuber, K. W., Jehnichen, D., Janke, A., Fischer, D., Heinrich, G., Busfield, J. J. C. & Das, A., 20 Jun 2019, In : Journal of Physical Chemistry B. 123, 24, p. 5168-5175 8 p.

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

**Photovoltaic properties of low-bandgap (0.7–0.9eV) lattice-matched GaInNAsSb solar junctions grown by molecular beam epitaxy on GaAs**

Isoaho, R., Aho, A., Tukiainen, A., Aho, T., Raappana, M., Salminen, T., Reuna, J. & Guina, M., 15 Jun 2019, In : Solar Energy Materials and Solar Cells. 195, p. 198-203 6 p.

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**Role of fracture toughness in impact-abrasion wear**

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#### **Surface reactivity and silanization ability of borosilicate and Mg-Sr-based bioactive glasses**

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#### **Comparison of various high-stress wear conditions and wear performance of martensitic steels**

Valtonen, K., Ojala, N., Haiko, O. & Kuokkala, V-T., 30 Apr 2019, In : Wear. 426-427, Part A, p. 3-13 11 p.

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#### **The formation and characterization of fretting-induced degradation layers using quenched and tempered steel**

Nurmi, V., Hintikka, J., Juoksukangas, J., Honkanen, M., Vippola, M., Lehtovaara, A., Mäntylä, A., Vaara, J. & Frondelius, T., 1 Mar 2019, In : Tribology International. 131, p. 258-267 10 p.

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#### **Stable and unstable friction in fretting contacts**

Hintikka, J., Mäntylä, A., Vaara, J., Frondelius, T. & Lehtovaara, A., 1 Mar 2019, In : Tribology International. 131, p. 73-82 10 p.

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#### **Mining tailings as raw materials for reaction-sintered aluminosilicate ceramics: Effect of mineralogical composition on microstructure and properties**

Karhu, M., Lagerbom, J., Solismaa, S., Honkanen, M., Ismailov, A., Räisänen, M. L., Huttunen-Saarivirta, E., Levänen, E. & Kivikytö-Reponen, P., Mar 2019, In : Ceramics International. 45, 4, p. 4840-4848

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

#### **Characterization of Powder-Precursor HVOF-Sprayed Al<sub>2</sub>O<sub>3</sub>-YSZ/ZrO<sub>2</sub> Coatings**

Kiilakoski, J., Puranen, J., Heinonen, E., Koivuluoto, H. & Vuoristo, P., Jan 2019, In : Journal of Thermal Spray Technology. 28, 1-2, p. 98-107

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

#### **Behaviour of leaded tin bronze in simulated seawater in the absence and presence of tribological contact with alumina counterbody: Corrosion, wear and tribocorrosion**

Huttunen-Saarivirta, E., Isotahdon, E., Metsäjoki, J., Salminen, T., Ronkainen, H. & Carpén, L., 2019, In : Tribology International. 129, p. 257-271 15 p.

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#### **On the limit of superhydrophobicity: Defining the minimum amount of TiO<sub>2</sub> nanoparticle coating**

Haapanen, J., Aromaa, M., Teisala, H., Juuti, P., Tuominen, M., Sillanpää, M., Stepien, M., Saarinen, J. J., Toivakka, M., Kuusipalo, J. & Mäkelä, J. M., 2019, In : Materials Research Express. 6, 3, 035004.

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#### **Running-in effects on friction of journal bearings under slow sliding speeds**

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#### **Temperature scanning stress relaxation behavior of water responsive and mechanically adaptive elastomer nanocomposites**

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#### **Process Parameter Impact on Suspension-HVOF-Sprayed $\text{Cr}_2\text{O}_3$ Coatings**

Kiilakoski, J., Trache, R., Björklund, S., Joshi, S. & Vuoristo, P., 2019, In : Journal of Thermal Spray Technology. 12 p.

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#### **Mechanical characterization of pore-graded bioactive glass scaffolds produced by robocasting**

Barberi, J., Nommeots-Nomm, A., Fiume, E., Verné, E., Massera, J. & Baino, F., 2019, In : Biomedical Glasses. 5, 1, p. 140-147 8 p.

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#### **How well can we predict cluster fragmentation inside a mass spectrometer?**

Passananti, M., Zapadinsky, E., Zanca, T., Kangasluoma, J., Myllys, N., Rissanen, M. P., Kurtén, T., Ehn, M., Attoui, M. & Vehkamäki, H., 2019, In : Chemical Communications. 55, 42, p. 5946-5949 4 p.

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#### **Mechanical, thermal, and burning properties of viscose fabric composites: Influence of epoxy resin modification**

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#### **Design aspects of all atomic layer deposited $\text{TiO}_2\text{-Fe}_2\text{O}_3$ scaffold-absorber photoanodes for water splitting**

Hiltunen, A., Ruoko, T-P., Iivonen, T., Lahtonen, K., Ali-Löytty, H., Sarlin, E., Valden, M., Leskelä, M. & Tkachenko, N., 31 Jul 2018, In : Sustainable Energy & Fuels. 2, 9, p. 2124-2130

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#### **Fluid flow simulations meet high-speed video: Computer vision comparison of droplet dynamics**

Kulju, S., Riegger, L., Koltay, P., Mattila, K. & Hyväluoma, J., 15 Jul 2018, In : Journal of Colloid and Interface Science. 522, p. 48-56 9 p.

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#### **Evaluation of screen printed silver trace performance and long-term reliability against environmental stress on a low surface energy substrate**

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#### **The effect of carbon and nickel additions on the precursor synthesis of $\text{Cr}_3\text{C}_2\text{-Ni}$ nanopowder**

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#### **The effects of laser patterning $10\text{CeTZP-Al}_2\text{O}_3$ nanocomposite disc surfaces: Osseous differentiation and cellular arrangement in vitro**

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#### **Influence of the phosphate glass melt on the corrosion of functional particles occurring during the preparation of glass-ceramics**

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#### **Morphology evolution of PS-b-PDMS block copolymer and its hierarchical directed self-assembly on block copolymer templates**

Rasappa, S., Schulte, L., Borah, D., Hulkkonen, H., Ndoni, S., Salminen, T., Senthamarayanan, R., Morris, M. A. & Niemi, T., 15 May 2018, In : Microelectronic Engineering. 192, p. 1-7 7 p.

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#### **Switchable light reflectance in dilute magneto-optical colloids based on nickel ferrite nanowires**

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#### **Characteristics of nFOG, an aerosol-based wet thin film coating technique**

Harra, J., Tuominen, M., Juuti, P., Rissler, J., Koivuluoto, H., Haapanen, J., Niemelä-Anttonen, H., Stenroos, C., Teisala, H., Lahti, J., Kuusipalo, J., Vuoristo, P. & Mäkelä, J. M., May 2018, In : Journal of Coatings Technology Research. 15, 3, p. 623-632 10 p.

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#### **Accurate Binding of Sodium and Calcium to a POPC Bilayer by Effective Inclusion of Electronic Polarization**

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#### **Membrane bound COMT isoform is an interfacial enzyme: General mechanism and new drug design paradigm**

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#### **Effect of nozzle geometry on the microstructure and properties of hvaf-sprayed wc-10co4cr and cr3c2-25nicr coatings**

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#### **Improving the high temperature abrasion resistance of thermally sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr coatings by WC addition**

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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.

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#### **Arc-sprayed Fe-based coatings from coredwires for wear and corrosion protection in power engineering**

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

#### **Tribology of FeVCrC coatings deposited by HVOF and HVOF thermal spray processes**

Bolelli, G., Bursi, M., Lusvarghi, L., Manfredini, T., Matikainen, V., Rigon, R., Sassatelli, P. & Vuoristo, P., 2018, In : Wear. 394-395, p. 113-133 21 p.

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

#### **Stable blue phase polymeric Langmuir-Schaefer films based on unsymmetrical hydroxyalkadiynyl N-arylcarbamate derivatives**

Alekseev, A., Ihalainen, P., Ivanov, A., Domnin, I., Rosqvist, E., Lemmetyinen, H., Vuorimaa-Laukkanen, E., Peltonen, J. & Vyaz'min, S., 2018, In : *Thin Solid Films*. 645, p. 108-118 11 p.

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#### **Light-trapping enhanced thin-film III-V quantum dot solar cells fabricated by epitaxial lift-off**

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#### **Erosive-abrasive wear behavior of carbide-free bainitic and boron steels compared in simulated field conditions**

Vuorinen, E., Heino, V., Ojala, N., Haiko, O. & Hedayati, A., 2018, In : *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*. 232, 1, p. 3-13 11 p.

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#### **Novel Online Diagnostic Analysis for In-Flight Particle Properties in Cold Spraying**

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#### **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

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#### **Efficient photon upconversion at remarkably low annihilator concentrations in a liquid polymer matrix: when less is more**

Durandin, N. A., Isokuortti, J., Efimov, A., Vuorimaa-Laukkanen, E., Tkachenko, N. V. & Laaksonen, T., 2018, In : *Chemical Communications*. 54, 99, p. 14029-14032 4 p.

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

#### **Supercritical carbon dioxide treatment of hot dip galvanized steel as a surface treatment before coating**

Saarimaa, V., Kaleva, A., Nikkanen, J-P., Heinonen, S., Levänen, E., Väisänen, P., Markkula, A. & Juhanoja, J., 15 Dec 2017, In : *Surface and Coatings Technology*. 331, p. 137-142 6 p.

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

#### **Time-Resolved Fluorescence Spectroscopy Reveals Fine Structure and Dynamics of Poly(L-lysine) and Polyethylenimine Based DNA Polyplexes**

Lisitsyna, E. S., Ketola, T-M., Morin-Picardat, E., Liang, H., Hanzlíková, M., Urtti, A., Yliperttula, M. & Vuorimaa-Laukkanen, E., 7 Dec 2017, In : *Journal of Physical Chemistry B*. 121, 48, p. 10782-10792 11 p.

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

#### **Oxygen and water vapor transmission rates of starch-poly(vinyl alcohol) barrier coatings for flexible packaging paper**

Christophliemk, H., Johansson, C., Ullsten, H. & Järnström, L., 1 Dec 2017, In : *Progress in Organic Coatings*. 113, p. 218-224 7 p.

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

#### **Infrared Thermography as a Non-destructive Testing Solution for Thermal Spray Metal Coatings**

Santangelo, P. E., Allesina, G., Bolelli, G., Lusvarghi, L., Matikainen, V. & Vuoristo, P., Dec 2017, In : *Journal of Thermal Spray Technology*. 26, 8, p. 1982-1993 12 p.

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

#### **Erosive wear of filled vinyl ester composites in water and acidic media at elevated temperature**

Sarlin, E., Saarimäki, M., Sironen, R., Lindgren, M., Siljander, S., Kanerva, M. & Vuorinen, J., 15 Nov 2017, In : *Wear*. 390-391, p. 84-92 9 p.

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

### **Global energy consumption due to friction and wear in the mining industry**

Holmberg, K., Kivikytö-Reponen, P., Härkisaari, P., Valtonen, K. & Erdemir, A., 1 Nov 2017, In : Tribology International. 115, p. 116-139 24 p.

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

### **One-step flame synthesis of silver nanoparticles for roll-to-roll production of antibacterial paper**

Brobbe, K. J., Haapanen, J., Gunell, M., Mäkelä, J. M., Eerola, E., Toivakka, M. & Saarinen, J. J., 31 Oct 2017, In : Applied Surface Science. 420, p. 558-565 8 p.

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

### **Fluorimetric oxygen sensor with an efficient optical read-out for in vitro cell models**

Välimäki, H., Verho, J., Kreutzer, J., Kattiparambil Rajan, D., Rynänen, T., Pekkanen-Mattila, M., Ahola, A., Tappura, K., Kallio, P. & Leikkala, J., 1 Oct 2017, In : Sensors and Actuators B: Chemical. 249, p. 738-746 9 p.

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

### **Starch-poly(vinyl alcohol) barrier coatings for flexible packaging paper and their effects of phase interactions**

Christophliemk, H., Ullsten, H., Johansson, C. & Järnström, L., 1 Oct 2017, In : Progress in Organic Coatings. 111, p. 13-22 10 p.

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

### **Investigation of long-term chemical stability of structured ZnO films in aqueous solutions of varying conditions**

Heinonen, S., Nikkanen, J-P., Huttunen-Saarivirta, E. & Levänen, E., 30 Sep 2017, In : Thin Solid Films. 638, p. 410-419 10 p.

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### **Systematic analysis of coating-substrate interactions in the presence of flow localization**

Isakov, M., Matikainen, V., Koivuluoto, H. & May, M., 15 Sep 2017, In : Surface and Coatings Technology. 324, p. 264-280 17 p.

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

### **Wear of cemented tungsten carbide percussive drill-bit inserts: Laboratory and field study**

Tkalich, D., Li, C. C., Kane, A., Saai, A., Tkalich, D., Yastrebov, V. A., Hokka, M., Kuokkala, V-T., Bengtsson, M. & From, A., 15 Sep 2017, In : Wear. 386-387, p. 106-117 12 p.

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

### **A Study of Cr<sub>3</sub>C<sub>2</sub>-Based HVOF- and HVOF-Sprayed Coatings: Microstructure and Carbide Retention**

Matikainen, V., Bölelli, G., Koivuluoto, H., Honkanen, M., Vippola, M., Lusvarghi, L. & Vuoristo, P., Aug 2017, In : Journal of Thermal Spray Technology. 26, 6, p. 1-18 18 p.

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

### **Configurational Disorder of Water Hydrogen-Bond Network at the Protein Dynamical Transition**

Rahaman, O., Kalimeri, M., Katava, M., Paciaroni, A. & Sterpone, F., 20 Jul 2017, In : Journal of Physical Chemistry Part B. 121, 28, p. 6792-6798 7 p.

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

### **Vegetable fillers for electric stimuli responsive elastomers**

Poikelispää, M., Shakun, A., Sarlin, E., Das, A. & Vuorinen, J., 20 Jul 2017, In : Journal of Applied Polymer Science. 134, 28, 45081.

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

### **Microwave induced hierarchical nanostructures on aramid fibers and their influence on adhesion properties in a rubber matrix**

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



#### **Hafnium oxide thin films as a barrier against copper diffusion in solar absorbers**

Kotilainen, M., Krumpolec, R., Franta, D., Souček, P., Homola, T., Cameron, D. C. & Vuoristo, P., 1 Jul 2017, In : Solar Energy Materials and Solar Cells. 166, p. 140-146 7 p.

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

#### **Long-Range Observation of Exciplex Formation and Decay Mediated by One-Dimensional Bridges**

Baek, J., Umeyama, T., Stranius, K., Yamada, H., Tkachenko, N. V. & Imahori, H., 29 Jun 2017, In : Journal of Physical Chemistry C. 121, 25, p. 13952-13961 10 p.

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#### **Catalytic Activity of AuCu Clusters on MgO(100): Effect of Alloy Composition for CO Oxidation**

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#### **Geometric Structure and Chemical Ordering of Large AuCu Clusters: A Computational Study**

Goh, J.-Q., Akola, J. & Ferrando, R., 25 May 2017, In : Journal of Physical Chemistry C. 121, 20, p. 10809-10816 8 p.

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#### **Photoinduced Electron Injection from Zinc Phthalocyanines into Zinc Oxide Nanorods: Aggregation Effects**

Virkki, K., Hakola, H., Urbani, M., Tejerina, L., Ince, M., Martínez-Díaz, M. V., Torres, T., Golovanova, V., Golovanov, V. & Tkachenko, N. V., 4 May 2017, In : Journal of Physical Chemistry C. 121, 17, p. 9594-9605 12 p.

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#### **Third Particle Ejection Effects on Wear with Quenched and Tempered Steel Fretting Contact**

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#### **Improved corrosion properties of Hot Dip Galvanized Steel by nanomolecular silane layers as hybrid interface between zinc and top coatings**

Vuori, L., Ali-Löytty, H., Lahtonen, K., Hannula, M., Lehtonen, E., Niu, Y. & Valden, M., 2017, In : Corrosion. 73, 2

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#### **Sliding wear behaviour of HVOF and HVAF sprayed Cr<sub>3</sub>C<sub>2</sub>-based coatings**

Matikainen, V., Bolelli, G., Koivuluoto, H., Sassatelli, P., Lúsvarghi, L. & Vuoristo, P., 2017, In : Wear. 388-389, p. 57-71

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

#### **Load capacity of lubricated bismuth bronze bimetal bearing under elliptical sliding motion**

Oksanen, V. T., Lehtovaara, A. J. & Kallio, M. H., 2017, In : Wear. 388-389, p. 72-80

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

#### **Non-destructive and wireless monitoring of biodegradable polymers**

Salpavaara, T., Hänninen, A., Antniemi, A., Lekkala, J. & Kellomäki, M., 2017, In : Sensors and Actuators B: Chemical. 251, p. 1018-1025

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Lampio, K. & Karvinen, R., 2017, In : Microelectronics Reliability. 79, p. 473-479

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

#### **Two cations, two mechanisms: Interactions of sodium and calcium with zwitterionic lipid membranes**

Javanainen, M., Melcrová, A., Magarkar, A., Jurkiewicz, P., Hof, M., Jungwirth, P. & Martinez-Seara, H., 2017, In : Chemical Communications. 53, 39, p. 5380-5383 4 p.

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

**HVOF- and HVAF-Sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr Coatings Deposited from Feedstock Powders of Spherical Morphology: Microstructure Formation and High-Stress Abrasive Wear Resistance Up to 800 °C**

Janka, L., Norpoth, J., Trache, R., Thiele, S. & Berger, L. M., 2017, In : Journal of Thermal Spray Technology. 26, 7, p. 1720–1731 12 p.

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

**Abrasive-Erosive Wear of Thermally Sprayed Coatings from Experimental and Commercial Cr<sub>3</sub>C<sub>2</sub>-Based Powders**

Sarjas, H., Surzhenkov, A., Juhani, K., Antonov, M., Adoberg, E., Kulu, P., Viljus, M., Traksmäa, R., Matikainen, V. & Vuoristo, P., 2017, In : Journal of Thermal Spray Technology. 26, 8, p. 2020–2029 10 p.

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

**Photophysical properties of porphyrin dimer-single-walled carbon nanotube linked systems**

Baek, J., Umeyama, T., Mizuno, S., Tkachenko, N. V. & Imahori, H., 2017, In : Journal of Physical Chemistry C. 121, 39

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**Effect of finish rolling and quench stop temperatures on impact-abrasive wear resistance of 0.35 % carbon direct-quenched steel**

Haiko, O., Miettunen, I., Porter, D., Ojala, N., Ratia, V., Heino, V. & Kemppainen, A., 2017, In : Tribologia. 35, 1-2, p. 5-21 17 p.

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

**Superamphiphobic overhang structured coating on a biobased material**

Tuominen, M., Teisala, H., Haapanen, J., Mäkelä, J. M., Honkanen, M., Vippola, M., Bardage, S., Wälinder, M. E. P. & Swerin, A., 15 Dec 2016, In : Applied Surface Science. 389, p. 135-143 9 p.

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**Optimization of HVOF Cr<sub>3</sub>C<sub>2</sub>-NiCr coating for increased fatigue performance**

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

**Improvement of actuation performance of dielectric elastomers by barium titanate and carbon black fillers**

Poikelispää, M., Shakun, A., Das, A. & Vuorinen, J., 10 Nov 2016, In : Journal of Applied Polymer Science. 133, 42, 44116.

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**Experimental and numerical investigation of fretting fatigue behavior in bolted joints**

Juoksukangas, J., Lehtovaara, A. & Mäntylä, A., 1 Nov 2016, In : Tribology International. 103, p. 440-448 9 p.

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**Erosion–corrosion resistance of various stainless steel grades in high-temperature sulfuric acid solution**

Lindgren, M., Siljander, S., Suihkonen, R., Pohjanne, P. & Vuorinen, J., 15 Oct 2016, In : Wear. 364-365, p. 10-21 12 p.

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**A comparison of relative displacement fields between numerical predictions and experimental results in fretting contact**

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**RF measurements to pinpoint defects in inkjet-printed, thermally and mechanically stressed coplanar waveguides**

Myllymäki, S., Putaala, J., Hannu, J., Kunnari, E. & Mäntysalo, M., 1 Oct 2016, In : Microelectronics Reliability. 65, p. 142-150 9 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.

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### **Polyarginine Interacts More Strongly and Cooperatively than Polylysine with Phospholipid Bilayers**

Robison, A. D., Sun, S., Poyton, M. F., Johnson, G. A., Pellois, J. P., Jungwirth, P., Vazdar, M. & Cremer, P. S., 8 Sep 2016, In : Journal of Physical Chemistry Part B. 120, 35, p. 9287-9296 10 p.

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### **Detergent impurity effect on recycled HDPE: Properties after repetitive processing**

Mylläri, V., Hartikainen, S., Poliakova, V., Anderson, R., Jönkkäri, I., Pasanen, P., Andersson, M. & Vuorinen, J., 15 Aug 2016, In : Journal of Applied Polymer Science. 133, 31, 43766.

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### **Reinforced chloroprene rubber by in situ generated silica particles: Evidence of bound rubber on the silica surface**

Kapgate, B. P., Das, C., Das, A., Basu, D., Wiessner, S., Reuter, U. & Heinrich, G., 10 Aug 2016, In : Journal of Applied Polymer Science. 133, 30, 43717.

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### **The red, purple and blue modifications of polymeric unsymmetrical hydroxyalkadiynyl-N-arylcarbamate derivatives in Langmuir-Schaefer films**

Alekseev, A., Ihalainen, P., Ivanov, A., Domnin, I., Klechkovskaya, V., Orekhov, A., Lemmetyinen, H., Vuorimaa-Laukkanen, E., Peltonen, J. & Vyaz'min, S., 1 Aug 2016, In : Thin Solid Films. 612, p. 463-471 9 p.

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

### **Sliding and abrasive wear behaviour of HVOF- and HVOF-sprayed Cr<sub>3</sub>C<sub>2</sub>-NiCr hardmetal coatings**

Bolelli, G., Berger, L. M., Börner, T., Koivuluoto, H., Matikainen, V., Lusvarghi, L., Lyphout, C., Markocsan, N., Nylén, P., Sassatelli, P., Trache, R. & Vuoristo, P., 15 Jul 2016, In : Wear. 358-359, p. 32-50 19 p.

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### **Erosion wear of vinyl ester matrix composites in aqueous and acidic environments at elevated temperatures**

Suihkonen, R., Lindgren, M., Siljander, S., Sarlin, E. & Vuorinen, J., 15 Jul 2016, In : Wear. 358-359, p. 7-16 10 p.

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### **Characterization of High-Velocity Single Particle Impacts on Plasma-Sprayed Ceramic Coatings**

Kiilakoski, J., Lindroos, M., Apostol, M., Koivuluoto, H., Kuokkala, V-T. & Vuoristo, P., 24 Jun 2016, In : Journal of Thermal Spray Technology. 25, p. 1127-1137 11 p.

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### **Microstructure and Sliding Wear Behavior of Fe-Based Coatings Manufactured with HVOF and HVOF Thermal Spray Processes**

Milanti, A., Matikainen, V., Bolelli, G., Koivuluoto, H., Lusvarghi, L. & Vuoristo, P., Jun 2016, In : Journal of Thermal Spray Technology. 25, 5, p. 1040-1055 16 p.

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### **Influence of As/group-III flux ratio on defects formation and photovoltaic performance of GaInNAs solar cells**

Polojärvi, V., Aho, A., Tukiainen, A., Raappana, M., Aho, T., Schramm, A. & Guina, M., 1 May 2016, In : Solar Energy Materials and Solar Cells. 149, p. 213-220 8 p.

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### **Effect of Hole Transporting Material on Charge Transfer Processes in Zinc Phthalocyanine Sensitized ZnO Nanorods**

Hakola, H., Sariola-Leikas, E., Efimov, A. & Tkachenko, N. V., 21 Apr 2016, In : Journal of Physical Chemistry C. 120, 13, p. 7044-7051 8 p.

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### **Influence of heat treatment on the abrasive wear resistance of a Cr<sub>3</sub>C<sub>2</sub>NiCr coating deposited by an ethene-fuelled HVOF spray process**

Janka, L., Norpoth, J., Trache, R. & Berger, L. M., 15 Apr 2016, In : Surface and Coatings Technology. 291, p. 444-451 8 p.

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#### **Wetting hysteresis induced by temperature changes: Supercooled water on hydrophobic surfaces**

Heydari, G., Sedighi Moghaddam, M., Tuominen, M., Fielden, M., Haapanen, J., Mäkelä, J. M. & Claesson, P. M., 15 Apr 2016, In : *Journal of Colloid and Interface Science*. 468, p. 21-33 13 p.

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#### **Stability and Function at High Temperature. What Makes a Thermophilic GTPase Different from Its Mesophilic Homologue**

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#### **Piezoresistive natural rubber-multiwall carbon nanotube nanocomposite for sensor applications**

Selvan, N. T., Eshwaran, S. B., Das, A., Stöckelhuber, K. W., Wießner, S., Pötschke, P., Nando, G. B., Chervanyov, A. I. & Heinrich, G., 1 Mar 2016, In : *Sensors and Actuators, A: Physical*. 239, p. 102-113 12 p.

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#### **Ambient-Pressure XPS Study of a Ni-Fe Electrocatalyst for the Oxygen Evolution Reaction**

Ali-Löytty, H., Louie, M. W., Singh, M. R., Li, L., Sanchez Casalongue, H. G., Ogasawara, H., Crumlin, E. J., Liu, Z., Bell, A. T., Nilsson, A. & Friebel, D., 4 Feb 2016, In : *Journal of Physical Chemistry C*. 120, 4, p. 2247-2253 7 p.

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#### **Guanidinium Pairing Facilitates Membrane Translocation**

Allolio, C., Baxova, K., Vazdar, M. & Jungwirth, P., 14 Jan 2016, In : *Journal of Physical Chemistry Part B*. 120, 1, p. 143-153 11 p.

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#### **Static friction measurements on steel against uncoated and coated cast iron**

Andersson, P., Kilpi, L., Holmberg, K., Vaajoki, A. & Oksanen, V., 1 Jan 2016, In : *Tribologia*. 34, 1-2, p. 5-40 36 p.

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#### **Normal displacements in non-Coulomb friction conditions during fretting**

Hintikka, J., Lehtovaara, A. & Mäntylä, A., 2016, In : *Tribology International*. 94, p. 633-639

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#### **Influence of temperature-induced copper diffusion on degradation of selective chromium oxy-nitride solar absorber coatings**

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

#### **Wear and impact behaviour of High Velocity Air-Fuel sprayed Fe-Cr-Ni-B-C alloy coatings**

Bolelli, G., Milanti, A., Lusvarghi, L., Trombi, L., Koivuluoto, H. & Vuoristo, P., 2016, In : *Tribology International*. 95, p. 372-390

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#### **The role of edge-concentrated wear in impact-abrasion testing**

Ratia, V., Valtonen, K., Kempainen, A. & Kuokkala, V. T., 2016, In : *Tribology Online*. 11, 2, p. 410-416 7 p.

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#### **Microstructural and abrasion wear characteristics of laser-clad tool steel coatings**

Tuominen, J., Näkki, J., Pajukoski, H., Hyvärinen, L. & Vuoristo, P., 2016, In : *Surface Engineering*. 32, 12, p. 923-933 11 p.

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### **Rapid and sensitive detection of norovirus antibodies in human serum with a bilayer interferometry biosensor**

Auer, S., Koho, T., Uusi-Kerttula, H., Vesikari, T., Blazevic, V. & Hytönen, V. P., 31 Dec 2015, In : *Sensors and Actuators B: Chemical*. 221, p. 507-514 8 p.

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### **Comparison of laboratory rolling-sliding wear tests with in-service wear of nodular cast iron rollers against wire ropes**

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### **Production of sulfonated polyetheretherketone/polypropylene fibers for photoactive textiles**

Mylläri, V., Fatarella, E., Ruzzante, M., Pogni, R., Baratto, M. C., Skrifvars, M., Syrjälä, S. & Järvelä, P., 1 Oct 2015, In : *Journal of Applied Polymer Science*. 132, 39, 42595.

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### **ESD qualification data used as the basis for building electrostatic discharge protected areas**

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### **PIP2 and Talin Join Forces to Activate Integrin**

Orlowski, A., Kukkurainen, S., Pöyry, A., Rissanen, S., Vattulainen, I., Hytönen, V. P. & Róg, T., 24 Sep 2015, In : *Journal of Physical Chemistry Part B*. 119, 38, p. 12381-12389 9 p.

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### **Wear Properties of Thermally Sprayed Tungsten-Carbide Coatings in Paper Machine Environments**

Kiilakoski, J., Eronen, V. & Vuoristo, P., 21 Sep 2015, In : *Tribologia - Finnish Journal of Tribology*. 33, 2, p. 29 35 p.

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### **Construction of an Interconnected Nanostructured Carbon Black Network: Development of Highly Stretchable and Robust Elastomeric Conductors**

Bhagavatheswaran, E. S., Parsekar, M., Das, A., Le, H. H., Wiessner, S., Stöckelhuber, K. W., Schmaucks, G. & Heinrich, G., 17 Sep 2015, In : *Journal of Physical Chemistry C*. 119, 37, p. 21723-21731 9 p.

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

### **Effect of spraying parameters on the microstructural and corrosion properties of HVOF-sprayed Fe-Cr-Ni-B-C coatings**

Milanti, A., Matikainen, V., Koivuluoto, H., Bolelli, G., Lusvardi, L. & Vuoristo, P., 15 Sep 2015, In : *Surface and Coatings Technology*. 277, p. 81-90 10 p.

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### **Superatom Model for Ag-S Nanocluster with Delocalized Electrons**

Goh, J. Q. & Akola, J., 10 Sep 2015, In : *Journal of Physical Chemistry C*. 119, 36, p. 21165-21172 8 p.

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

Lepcha, A., Maccato, C., Mettenböcker, 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.

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### **Effect of Phosphatidic Acid on Biomembrane: Experimental and Molecular Dynamics Simulations Study**

Kwolek, U., Kulig, W., Wydro, P., Nowakowska, M., Róg, T. & Kepczynski, M., 6 Aug 2015, In : *Journal of Physical Chemistry Part B*. 119, 31, p. 10042-10051 10 p.

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

#### **Evaluation of crushing strength of spray-dried MgAl<sub>2</sub>O<sub>4</sub> granule beds**

Kanerva, U., Suhonen, T., Lagerbom, J. & Levänen, E., 1 Aug 2015, In : *Ceramics International*. 41, 7, p. 8494-8500 7 p.  
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#### **Nonlinear Optical Properties of Fluorescent Dyes Allow for Accurate Determination of Their Molecular Orientations in Phospholipid Membranes**

Timr, Š., Brabec, J., Bondar, A., Ryba, T., Železný, M., Lazar, J. & Jungwirth, P., 30 Jul 2015, In : *Journal of Physical Chemistry Part B*. 119, 30, p. 9706-9716 11 p.

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

#### **Photoinduced Electron Transfer in CdSe/ZnS Quantum Dot-Fullerene Hybrids**

Virkki, K., Demir, S., Lemmetyinen, H. & Tkachenko, N. V., 23 Jul 2015, In : *Journal of Physical Chemistry C*. 119, 31, p. 17561-17572 12 p.

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

#### **Role of Internal Water on Protein Thermal Stability: The Case of Homologous G Domains**

Rahaman, O., Kalimeri, M., Melchionna, S., Hénin, J. & Sterpone, F., 23 Jul 2015, In : *Journal of Physical Chemistry Part B*. 119, 29, p. 8939-8949 11 p.

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

#### **Fretting-induced friction and wear in large flat-on-flat contact with quenched and tempered steel**

Hintikka, J., Lehtovaara, A. & Mäntylä, A., 2 Jul 2015, In : *Tribology International*. 92, p. 191-202 12 p.

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

#### **A comparison of rheology and FTIR in the study of polypropylene and polystyrene photodegradation**

Mylläri, V., Ruoko, T.-P. & Syrjälä, S., 1 Jul 2015, In : *Journal of Applied Polymer Science*. 132, 28, 6 p., 42246.

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

#### **Synthesis and Photophysical Properties of Two Diazaporphyrin-Porphyrin Hetero Dimers in Polar and Nonpolar Solutions**

Abou-Chahine, F., Fujii, D., Imahori, H., Nakano, H., Tkachenko, N. V., Matano, Y. & Lemmetyinen, H., 18 Jun 2015, In : *Journal of Physical Chemistry Part B*. 119, 24, p. 7328-7337 10 p.

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

#### **Passive resonance sensor based method for monitoring particle suspensions**

Salpavaara, T., Järveläinen, M., Seppälä, S., Yli-Hallila, T., Verho, J., Vilkkö, M., Lekkala, J. & Levänen, E., 8 Jun 2015, In : *Sensors and Actuators B: Chemical*. 219, p. 324-330 7 p.

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

#### **PEGylated liposomes as carriers of hydrophobic porphyrins**

Dzieciuch, M., Rissanen, S., Szydłowska, N., Bunker, A., Kumorek, M., Jamróz, D., Vattulainen, I., Nowakowska, M., Róg, T. & Kepczynski, M., 4 Jun 2015, In : *Journal of Physical Chemistry Part B*. 119, 22, p. 6646-6657 12 p.

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

#### **Hydration of hydroxyl and amino groups examined by molecular dynamics and neutron scattering**

Hladílková, J., Fischer, H. E., Jungwirth, P. & Mason, P. E., 28 May 2015, In : *Journal of Physical Chemistry Part B*. 119, 21, p. 6357-6365 9 p.

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

#### **Effect of melting state on the thermal shock resistance and thermal conductivity of APS ZrO<sub>2</sub>-7.5wt.% Y<sub>2</sub>O<sub>3</sub> coatings**

Song, X., Liu, Z., Suhonen, T., Varis, T., Huang, L., Zheng, X. & Zeng, Y., 25 May 2015, In : *Surface and Coatings Technology*. 270, p. 132-138 7 p.

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

#### **The effect of impact conditions on the wear and deformation behavior of wear resistant steels**

Lindroos, M., Ratia, V., Apostol, M., Valtonen, K., Laukkanen, A., Molnar, W., Holmberg, K. & Kuokkala, V. T., 5 Apr 2015, In : *Wear*. 328-329, p. 197-205 9 p.

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

**Erosive wear of various stainless steel grades used as impeller blade materials in high temperature aqueous slurry**

Lindgren, M., Suihkonen, R. & Vuorinen, J., 5 Apr 2015, In : *Wear*. 328-329, p. 391-400 10 p.

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

**Oxidation of cholesterol does not alter significantly its uptake into high-density lipoprotein particles**

Karilainen, T., Timr, Š., Vattulainen, I. & Jungwirth, P., 2 Apr 2015, In : *Journal of Physical Chemistry Part B*. 119, 13, p. 4594-4600 7 p.

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

**Tribology of HVOF- and HVAF-sprayed WC-10Co4Cr hardmetal coatings: A comparative assessment**

Bolelli, G., Berger, L. M., Börner, T., Koivuluoto, H., Lusvarghi, L., Lyphout, C., Markocsan, N., Matikainen, V., Nylén, P., Sassatelli, P., Trache, R. & Vuoristo, P., 15 Mar 2015, In : *Surface and Coatings Technology*. 265, p. 125-144 20 p.

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

**High temperature corrosion of thermally sprayed NiCr and FeCr coatings covered with a KCl-K<sub>2</sub>SO<sub>4</sub> salt mixture**

Varis, T., Bankiewicz, D., Yrjas, P., Oksa, M., Suhonen, T., Tuurna, S., Ruusuvuori, K. & Holmström, S., 15 Mar 2015, In : *Surface and Coatings Technology*. 265, p. 235-243 9 p.

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

**Exploring the role of stearic acid in modified zinc aluminum layered double hydroxides and their acrylonitrile butadiene rubber nanocomposites**

Eshwaran, S. B., Basu, D., Vaikuntam, S. R., Kutlu, B., Wiessner, S., Das, A., Naskar, K. & Heinrich, G., 1 Mar 2015, In : *Journal of Applied Polymer Science*. 132, 9, 41539.

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

**Sulfonated polyetheretherketone/polypropylene polymer blends for the production of photoactive materials**

Fatarella, E., Mylläri, V., Ruzzante, M., Pogni, R., Baratto, M. C., Skrifvars, M., Syrjälä, S. & Järvelä, P., 1 Feb 2015, In : *Journal of Applied Polymer Science*. 132, 8, 41509.

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

**Silver sulfide nanoclusters and the superatom model**

Goh, J.-Q., Malola, S., Häkkinen, H. & Akola, J., 22 Jan 2015, In : *Journal of Physical Chemistry C*. 119, 3, p. 1583-1590 8 p.

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

**Effect of Multiple Impacts on the Deformation of Wear-Resistant Steels**

Ratia, V., Rojacz, H., Terva, J., Valtonen, K., Badisch, E. & Kuokkala, V. T., 21 Jan 2015, In : *Tribology Letters*. 57, 2, 15.

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

**Aryl end-capped quaterthiophenes applied as anode interfacial layers in inverted organic solar cells**

Heiskanen, J. P., Manninen, V. M., Pankov, D., Omar, W. A. E., Kastinen, T., Hukka, T. I., Lemmetyinen, H. J. & Hormi, O. E. O., 1 Jan 2015, In : *Thin Solid Films*. 574, p. 196-206 11 p.

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**The correlation between gear contact friction and ball on disc friction measurements**

Björling, M., Miettinen, J., Marklund, P., Lehtovaara, A. & Larsson, R., 2015, In : *Tribology International*. 83, p. 114-119 6 p.

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**Dielectric Breakdown Strength of Thermally Sprayed Ceramic Coatings: Effects of Different Test Arrangements**

Niittymäki, M., Lahti, K., Suhonen, T. & Metsäjoki, J., 2015, In : *Journal of Thermal Spray Technology*. 24, 3, p. 542-551 10 p.

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

**Digital correction of frequency response mismatches in 2-channel time-interleaved ADCs using adaptive I/Q signal processing**

Singh, S., Valkama, M., Epp, M., Anttila, L., Schlecker, W. & Ingber, E., 2015, In : Analog Integrated Circuits and Signal Processing. 82, 3, p. 543-555 13 p.

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**The deformation, strain hardening, and wear behavior of chromium-alloyed hadfield steel in abrasive and impact conditions**

Lindroos, M., Apostol, M., Heino, V., Valtonen, K., Laukkanen, A., Holmberg, K. & Kuokkala, V. T., 2015, In : Tribology Letters. 57, 3, 24.

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

**Influence of the Spray Gun Type on Microstructure and Properties of HVAF Sprayed Fe-Based Corrosion Resistant Coatings**

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

**DNA lesion can facilitate base ionization: Vertical ionization energies of aqueous 8-oxoguanine and its nucleoside and nucleotide**

Palivec, V., Pluharová, E., Unger, I., Winter, B. & Jungwirth, P., 4 Dec 2014, In : Journal of Physical Chemistry Part B. 118, 48, p. 13833-13837 5 p.

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**Fabrication and Characterization of Amorphous Alumina-Yttria-Stabilized Zirconia Coatings by Air Plasma Spraying**

Song, X., Suhonen, T., Varis, T., Huang, L., Zheng, X. & Zeng, Y., 25 Nov 2014, In : Journal of Thermal Spray Technology. 23, 8, p. 1302-1311 10 p.

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

**Rapid, Brushless Self-assembly of a PS-b-PDMS Block Copolymer for Nanolithography**

Rasappa, S., Schulte, L., Borah, D., Morris, M. A. & Ndoni, S., 1 Oct 2014, In : Colloids and Interface Science Communications. 2, p. 1-5 5 p.

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**Effects of composition and microstructure on the abrasive wear performance of quenched wear resistant steels**

Ojala, N., Valtonen, K., Heino, V., Kallio, M., Aaltonen, J., Siitonen, P. & Kuokkala, V. T., 15 Sep 2014, In : Wear. 317, 1-2, p. 225-232 8 p.

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**Effect of silane integrated sol-gel derived in situ silica on the properties of nitrile rubber**

Kapgate, B. P., Das, C., Basu, D., Das, A., Heinrich, G. & Reuter, U., 5 Aug 2014, In : Journal of Applied Polymer Science. 115, 15, 40531.

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**Performance testing of iron based thermally sprayed HVOF coatings in a biomass-fired fluidised bed boiler**

Oksa, M., Varis, T. & Ruusuvoori, K., 25 Jul 2014, In : Surface and Coatings Technology. 251, p. 191-200 10 p.

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**Accurate description of calcium solvation in concentrated aqueous solutions**

Kohagen, M., Mason, P. E. & Jungwirth, P., 17 Jul 2014, In : Journal of Physical Chemistry Part B. 118, 28, p. 7902-7909 8 p.

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**Surface behavior of hydrated guanidinium and ammonium ions: A comparative study by photoelectron spectroscopy and molecular dynamics**

Werner, J., Wernersson, E., Ekholm, V., Ottosson, N., Öhrwall, G., Heyda, J., Persson, I., Söderström, J., Jungwirth, P. & Björneholm, O., 26 Jun 2014, In : Journal of Physical Chemistry Part B. 118, 25, p. 7119-7127 9 p.



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**Carbon nanotubes-filled thermoplastic polyurethane-urea and carboxylated acrylonitrile butadiene rubber blend nanocomposites**

Mahmood, N., Khan, A. U., Stöckelhuber, K. W., Das, A., Jehnichen, D. & Heinrich, G., 5 Jun 2014, In : Journal of Applied Polymer Science. 131, 11

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**Damage mechanisms and cracking behavior of thermal sprayed WC-CoCr coating under scratch testing**

Ghabchi, A., Sampath, S., Holmberg, K. & Varis, T., 15 May 2014, In : Wear. 313, 1-2, p. 97-105 9 p.

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**Composition dependent growth dynamics in molecular beam epitaxy of GaInNAs solar cells**

Aho, A., Polojärvi, V., Korpijärvi, V. M., Salmi, J., Tukiainen, A., Laukkanen, P. & Guina, M., May 2014, In : Solar Energy Materials and Solar Cells. 124, p. 150-158 9 p.

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**Microphase mechanism of "superquenching" of luminescent probes in aqueous solutions of DNA and some other polyelectrolytes**

Kuzmin, M. G., Soboleva, I. V., Durandin, N. A., Lisitsyna, E. S. & Kuzmin, V. A., 17 Apr 2014, In : Journal of Physical Chemistry Part B. 118, 15, p. 4245-4252 8 p.

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**Fabrication of ssDNA/oligo(ethylene glycol) monolayers by promoted exchange reaction with thiol and disulfide substituents**

Khan, M. N. & Zharnikov, M., 13 Feb 2014, In : Journal of Physical Chemistry C. 118, 6, p. 3093-3101 9 p.

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**Both zundel and eigen isomers contribute to the IR spectrum of the gas-phase H<sub>9</sub>O<sub>4</sub> + cluster**

Kulig, W. & Agmon, N., 9 Jan 2014, In : Journal of Physical Chemistry Part B. 118, 1, p. 278-286 9 p.

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**Release of halide ions from the buried active site of the haloalkane dehalogenase LinB revealed by stopped-flow fluorescence analysis and free energy calculations**

Hladilkova, J., Prokop, Z., Chaloupkova, R., Damborsky, J. & Jungwirth, P., 21 Nov 2013, In : Journal of Physical Chemistry Part B. 117, 46, p. 14329-14335 7 p.

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**How conformational flexibility stabilizes the hyperthermophilic elongation factor G-domain**

Kalimeri, M., Rahaman, O., Melchionna, S. & Sterpone, F., 7 Nov 2013, In : Journal of Physical Chemistry Part B. 117, 44, p. 13775-13785 11 p.

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**Spectroscopic study of a DNA brush synthesized in situ by surface initiated enzymatic polymerization**

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**Reversal of the Hofmeister series: Specific ion effects on peptides**

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**The sensitivity of random polymer brush-lamellar polystyrene-b-polymethylmethacrylate block copolymer systems to process conditions**

Borah, D., Rasappa, S., Sentharamakannan, R., Shaw, M. T., Holmes, J. D. & Morris, M. A., 1 Mar 2013, In : Journal of Colloid and Interface Science. 393, 1, p. 192-202 11 p.

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**Ab initio study of the surface properties of austenitic stainless steel alloys**

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**Aqueous guanidinium-carbonate interactions by molecular dynamics and neutron scattering: Relevance to ion-protein interactions**

Vazdar, M., Jungwirth, P. & Mason, P. E., 14 Feb 2013, In : Journal of Physical Chemistry Part B. 117, 6, p. 1844-1848 5 p.

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**Transforming anion instability into stability: Contrasting photoionization of three protonation forms of the phosphate ion upon moving into water**

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**Block copolymer lithography: Feature size control and extension by an over-etch technique**

Rasappa, S., Borah, D., Sentharamakannan, R., Faulkner, C. C., Shaw, M. T., Gleeson, P., Holmes, J. D. & Morris, M. A., 1 Nov 2012, In : Thin Solid Films. 522, p. 318-323 6 p.

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**Cysteine-tagged chimeric avidin forms high binding capacity layers directly on gold**

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**Behavior of 4-hydroxynonenal in phospholipid membranes**

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**Surface-relief gratings and stable birefringence inscribed using light of broad spectral range in supramolecular polymer-bisazobenzene complexes**

Koskela, J. E., Vapaavuori, J., Hautala, J., Priimagi, A., Faul, C. F. J., Kaivola, M. & Ras, R. H. A., 26 Jan 2012, In : Journal of Physical Chemistry C. 116, 3, p. 2363-2370 8 p.

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#### **Printable and flexible macroporous organosilica film with high protein adsorption capacity**

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#### **Orientalional dependence of the affinity of guanidinium ions to the water surface**

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#### **Towards universal enrichment nanocoating for IR-ATR waveguides**

Giammarco, J., Zdyrko, B., Petit, L., Musgraves, J. D., Hu, J., Agarwal, A., Kimerling, L., Richardson, K. & Luzinov, I., 28 Aug 2011, In : *Chemical Communications*. 47, 32, p. 9104-9106 3 p.

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#### **Detection of 3,4-methylenedioxymethamphetamine (MDMA, ecstasy) by displacement of antibodies**

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#### **Urea and guanidinium induced denaturation of a Trp-cage miniprotein**

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#### **Optimised selection of new protective coatings for biofuel boiler applications**

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#### **Plasma etch technologies for the development of ultra-small feature size transistor devices**

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#### **Energetic origin of proton affinity to the air/water interface**

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**Ionization of purine tautomers in nucleobases, nucleosides, and nucleotides: From the gas phase to the aqueous environment**

Pluhařová, E., Jungwirth, P., Bradforth, S. E. & Slaviček, P., 10 Feb 2011, In : Journal of Physical Chemistry Part B. 115, 5, p. 1294-1305 12 p.

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

**Interfacial design and structure of protein/polymer films on oxidized AlGaN surfaces**

Gupta, S. K., Wu, H. H., Kwak, K. J., Casal, P., Nicholson, T. R., Wen, X., Anisha, R., Bhushan, B., Berger, P. R., Lu, W., Brillson, L. J. & Lee, S. C., 26 Jan 2011, In : Journal of Physics D: Applied Physics. 44, 3, 34010.

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**Observation of off-axis directional beaming via subwavelength asymmetric metallic gratings**

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**Calculated electronic density of states and structural properties of tetrahedral amorphous carbon**

Koivusaari, K. J., Rantala, T. T. & Leppävuori, S., Apr 2000, In : Diamond and Related Materials. 9, 3, p. 736-740 5 p.

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**Morphological and structural changes in laser CVD of silicon: comparison of theoretical temperature calculations with experimental results**

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**Development in additive methods in aramid fiber surface modification to increase fiber-matrix adhesion: A review**

Palola, S., Vuorinen, J., Noordermeer, J. W. M. & Sarlin, E., 1 Jun 2020, In : Coatings. 10, 6, 31 p., 556.

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**Stimuli-responsive photonic polymer coatings**

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

**Formation mechanisms, structure, and properties of HVOF-sprayed WC-CoCr coatings: An approach toward process maps**

Varis, T., Suhonen, T., Ghabchi, A., Valarezo, A., Sampath, S., Liu, X. & Hannula, S. P., 2014, In : Journal of Thermal Spray Technology. 23, 6, p. 1009-1018 10 p.

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

**Development and application of HVOF sprayed spinel protective coating for SOFC interconnects**

Thomann, O., Pihlatie, M., Rautanen, M., Himanen, O., Lagerbom, J., Mäkinen, M., Varis, T., Suhonen, T. & Kiviaho, J., Jun 2013, In : Journal of Thermal Spray Technology. 22, 5, p. 631-639 9 p.

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

**Increased lifetime for biomass and waste to energy power plant boilers with HVOF coatings: High temperature corrosion testing under chlorine-containing molten salt**

Oksa, M., Tuurna, S. & Varis, T., Jun 2013, In : Journal of Thermal Spray Technology. 22, 5, p. 783-796 14 p.  
Research output: Contribution to journal > Review Article > Scientific > peer-review

**Corrosion properties of thermally sprayed bond coatings under plasma sprayed chromia coating in sulfuric acid solutions**

Vuoristo, P., Varis, T., Meschini, D., Bolelli, G. & Lusvarghi, L., May 2019, *International Thermal Spray Conference and Exposition, ITSC 2019: New Waves of Thermal Spray Technology for Sustainable Growth*. Azarmi, F., Lau, Y., Veilleux, J., Widener, C., Toma, F., Koivuluoto, H., Balani, K., Li, H. & Shinoda, K. (eds.). ASM International, p. 923-930 8 p.  
(Proceedings of the International Thermal Spray Conference).

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

**Process time importance in the product properties evolvement during extrusion coating of different LDPE grades**

Suokas, E. & Kuusipalo, J., 1 Jan 2018, *15th TAPPI Advanced Coating Fundamentals Symposium 2018: Charlotte; United States; 14 April 2018 through 15 April 2018*. TAPPI Press, p. 151-159 9 p.

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

**Active packaging by paper coating**

Jarnstrom, L., Johansson, K., Kuusipalo, J. & Jonsson, L., 1 Jan 2016, *14th TAPPI Advanced Coating Symposium 2016*. TAPPI Press, p. 88-92 5 p.

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

**Roll-to-roll application of photocatalytic TiO<sub>2</sub> nanoparticles for printed functionality**

Saarinen, J. J., Valtakari, D., Bollström, R., Stepien, M., Haapanen, J., Mäkelä, J. M. & Toivakka, M., 2016, *Advanced Manufacturing, Electronics and Microsystems: TechConnect Briefs 2016*. TechConnect, Vol. 4. p. 47-50 4 p.

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

**Improved properties for packaging materials by nanoscale surface modification and ALD barrier coating**

Lahti, J., Lavonen, J., Lahtinen, K., Johansson, P., Seppänen, T. & Cameron, D. C., 2016, *TAPPI International Conference on Nanotechnology for Renewable Materials 2016*. TAPPI Press, Vol. 2. p. 684-706 23 p.

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

**Characterization Of High-Velocity Single Particle Impacts On Thermally Sprayed Ceramic Coatings**

Kiilakoski, J., Lindroos, M., Matikainen, V., Apostol, N., Koivuluoto, H. & Vuoristo, P., 13 May 2015, (Unpublished) *International Thermal Spray Conference & Exposition 2015*.

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

**HVOF process control enabling strategies**

Ghabchi, A., Varis, T., Holmberg, K. & Sampath, S., 2012, *International Thermal Spray Conference and Exposition, ITSC 2012 - Air, Land, Water and the Human Body: Thermal Spray Science and Applications*. ASM International, p. 465-471 7 p.

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

**Adjustable wetting properties of paperboard by liquid flame spray process**

Stepien, M., Saarinen, J. J., Teisala, H., Tuominen, M., Aromaa, M., Kuusipalo, J., Mäkelä, J. & Toivakka, M., 2010, *11th Advanced Coating Fundamentals Symposium Proceedings: The Latest Advances in Coating Research and Development*. p. 80-88 9 p.

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

**CLC a Colored Liquid Crystal: Prototype Description and Design Opportunities**

Rubio Hernandez, R., 2009, *Proceedings of the 11th International Conference: Glass Performance Days*.

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

**Envolvente de Vidrio Electrocrómico**

Translated title of the contribution: : Electrochromic Glass Envelope

Rubio Hernandez, R., Marshall-Berenguer, R. & De la Flor San Vicente, L., 2004, *Foro ARCA II. Arquitectura y Calidad de vida. : Edificación y sostenibilidad: un compromiso posible.*

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

**Slurry and dry particle erosion wear properties of WC-10Co4Cr and Cr<sub>3</sub>C<sub>2</sub>-25NiCr hardmetal coatings deposited by HVOF and HVAF spray processes**

Matikainen, V., Rubio Peregrina, S., Ojala, N., Koivuluoto, H., Schubert, J., Houdková & Vuoristo, P., 2019, In : *Tribologia*. 36, 1-2, p. 58-61 4 p.

Research output: Contribution to journal > Article > Scientific

**Effect of microstructure on the abrasive wear resistance of steels with hardness 450 HV**

Haiko, O., Heino, V., Porter, D. A., Uusitalo, J. & Kömi, J., 2019, In : *Tribologia*. 36, 1, p. 54-57 4 p.

Research output: Contribution to journal > Article > Scientific

**Cavitation wear characteristics of Al<sub>2</sub>O<sub>3</sub>-ZrO<sub>2</sub>-ceramic coatings deposited by APS and HVOF -processes**

Kiilakoski, J., Lukac, F., Koivuluoto, H. & Vuoristo, P., 9 Jun 2017, *International Thermal Spray Conference ITSC 2017, Conference Proceedings: June 7-9, 2017, Düsseldorf, Germany..* Düsseldorf: DVS Media GmbH, Vol. 336. p. 928-933 6 p. (DVS-Berichte / DVS - Deutscher Verband für Schweißen und Verwandte Verfahren e.V.).

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

**Fracture Characteristics of High-Velocity Suspension Flame-Sprayed Aluminum Oxide Coatings**

Kiilakoski, J., Lutoschkin, A., Plachetta, M., Apostol, M., Koivuluoto, H., Killinger, A. & Vuoristo, P., 2016, *International Thermal Spray Conference & Exposition, ITSC 2016.* DVS Media GmbH, p. 466-471 6 p.

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

**Advanced coatings by novel high-kinetic thermal spray processes**

Matikainen, V., Koivuluoto, H., Milanti, A. & Vuoristo, P., 9 Feb 2015, In : *Materia*. 73, 1, p. 46-50 5 p.

Research output: Contribution to journal > Article > Professional

**Atomikerroskasvatusmenetelmällä kasvatetun titaanidioksidikalvon ominaisuudet valosähkökemiallisessa veden hajottamisessa**

Translated title of the contribution: : Properties of Atomic Layer Deposited Titanium Dioxide Film in Photoelectrochemical Water Splitting

Saari, J., 4 Oct 2017, 74 p.

Research output: Book/Report > Master's Thesis > Scientific

**Vacancy-type defect distributions near argon sputtered Al(100) surface studied by variable-energy positrons and molecular dynamics simulations**

Mäkinen, J., Vehanen, A., Hautojärvi, P., Huomo, H., Lahtinen, J., Nieminen, R. M. & Valkealahti, S., 2 Sep 1986, In : *Surface Science*. 175, 2, p. 385-414 30 p.

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

**Role of Oxide Defects in ALD grown TiO<sub>2</sub> Coatings on Performance as Photoanode Protection Layer**

Saari, J., Ali-Löytty, H. & Valden, M., 29 May 2018.

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

**Thermal Modification of ALD Grown Titanium Oxide Ultra Thin Film for Photoanode Applications**

Hannula, M. K., Lahtonen, K. T., Isotalo, T. J., Saari, J. S. & Valden, M. O., 15 Dec 2016.

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