

Scientific publications of BioNanoNet association members

In this section we have listed all publications sent to us by our BioNanoNet members from 2018 up to May 2021.

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■ [PERIOD 2020](#)

■ [PERIOD 2019](#)

■ [PERIOD 2018](#)

Period 2021

BOKU

Jandric, A., Part, F., Fink, N., Cocco, V., Mouillard, F., Huber-Humer, M., Salhofer, S. and Zafiu, C. (2020) Investigation of the heterogeneity of bromine in plastic components as an indicator for brominated flame retardants in waste electrical and electronic equipment with regard to recyclability. *Journal of Hazardous Materials* 390, 121899.

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Part, F., Zaba, C., Bixner, O., Zafiu, C., Lenz, S., Martetschläger, L., Hann, S., Huber-Humer, M. and Ehmoser, E.-K. (2020) Mobility and fate of ligand stabilized semiconductor nanoparticles in landfill leachates. *Journal of Hazardous Materials* 394, 122477.

<https://doi.org/10.1016/j.jhazmat.2020.122477>

Pavlicek, A., Part, F., Rose, G., Praetorius, A., Miernicki, M., Gzásó, A. and Huber-Humer, M. (2021) A European nano-registry as a reliable database for quantitative risk assessment of nanomaterials? A comparison of national approaches. *NanoImpact* 21, 100276.

<https://doi.org/10.1016/j.impact.2020.100276>

Scherhauser, S., Part, F. and Beigl, P. (2021) Das Sekundärressourcenpotenzial aus Windkraft- und Photovoltaikanlagen. *Österreichische Wasser- und Abfallwirtschaft* 73(1), 36-48.

<https://doi.org/10.1007/s00506-020-00723-3>

Zafiu, C., Part, F., Ehmoser, E.K. and Kahkonen, M.A. (2021) Investigations on inhibitory effects of nickel and cobalt salts on the decolorization of textile dyes by the white rot fungus *Phanerochaete velutina*. *Ecotoxicol Environ Saf* 215, 112093. <https://doi.org/10.1016/j.ecoenv.2021.112093>

CIBER-BBN

Joaquin Seras-Franzoso, Zamira V. Díaz-Riascos, José Luis Corchero, Patricia González, Natalia García-Aranda, Mònica Mandaña, Roger Riera, Ana Boullosa, Sandra Mancilla, Alba Grayston, Marc Moltó-Abad, Elena Garcia-Fruitós, Rosa Mendoza, Guillem Pintos-Morell, Lorenzo Albertazzi, Anna Rosell, Josefina Casas, Antonio Villaverde, Simó Schwartz Jr, Ibane Abasolo. (2021). Extracellular vesicles from recombinant cell factories improve the activity and efficacy of enzymes defective in lysosomal storage disorders. *Journal of Extracellular vesicles*. [DOI]

Vadillo-Rodríguez V, Cavagnola MA, Pérez-Giraldo, Fernández-Calderón MC. (2021) A physico-chemical study of the interaction of ethanolic extracts of propolis with bacterial cells. *Colloids Surf B Biointerfaces* 200, 111571. [DOI]

Marrero D, Pujol-Vila F, Vera D, Gabriel G, Illa X, Elizalde-Torrent A, Alvarez M, Villa R, Gut-on-a-chip: Mimicking and monitoring the human intestine. *Biosensors and Bioelectronics*. Volume 181, 1 June 2021, 113156. [DOI] <https://doi.org/10.1021/acsami.0c21573>

Clua A, Fàbrega C, García-Chica J, Grijalvo S, Eritja R. *Parallel G-quadruplex Structures Increase Cellular Uptake and Cytotoxicity of 5-Fluoro-2'-deoxyuridine Oligomers in 5-Fluorouracil Resistant Cells. Molecules*. 2021; 26(6):1741. [DOI]

Javier García-Pardo, Fernando Novio, Fabiana Nador, Ivana Cavaliere, Salvio Suárez-García, Silvia Lope-Piedrafita, Ana Paula Candiota, Jordi Romero-Gimenez, Beatriz Rodríguez-Galván, Jordi Bové, Miquel Vila, Julia Lorenzo, and Daniel Ruiz-Molina, Bioinspired Theranostic Coordination Polymer Nanoparticles for Intranasal Dopamine Replacement in Parkinson's Disease. *ACS Nano* 2021, 15, 5, 8592–8609, May 2021. [DOI]

Teresa Alejo, Laura Usón, Guillermo Landa, Martin Prieto, Cristina Yus Argón, Sara García-Salinas, Ricardo de Miguel, Ana Rodríguez-Largo, Silvia Irusta, Victor Sebastián, Gracia Mendoza and Manuel Arruebo. Nanogels with High Loading of Anesthetic Nanocrystals for Extended Duration of Sciatic Nerve Block, *ACS Appl. Mater. Interfaces*, 13, 15, 17220–17235. 2021 April 6. [DOI]

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DANUBE UNIVERSITY

Chiapella, A.M., Kainz, M.J., Strecker, A.L. (2021): Fatty acid stable isotopes add clarity, but also complexity, to tracing energy pathways in aquatic food webs. *Ecosphere*, 12(2):e03360.

<https://doi.org/10.1002/ecs2.3360>

Eichhorn, T., Linsberger, I., Lauková, L., Tripisciano, C., Fendl, B., Weiss, R., König, F., Valicek, G., Miestinger, G., Hörmann, C., Weber, V. (2021): Analysis of inflammatory mediator profiles in sepsis patients reveals that extracellular histones are strongly elevated in nonsurvivors. *Mediators of Inflammation*, Mar 17,2021:8395048. <https://doi.org/10.1155/2021/8395048>

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Huber, S., Knoll, M.A., Berktold, M., Würzner, R., Brindlmayer, A., Weber, V., Posch, A.E., Mrazek, K., Lepuschitz, S., Ante, M., Beisken, S., Orth-Höller, D., Weinberger, J. 2021: Genomic and phenotypic analysis of linezolid-resistant *Staphylococcus epidermidis* in a tertiary hospital in Innsbruck, Austria. *Microorganisms*, May 10,9(5):1023. <https://doi.org/10.3390/microorganisms9051023>

Karuthedom George, S., Lauková, L., Weiss, R., Semak, V., Fendl, B., Weiss, V.U., Steinberger, S., Allmaier, G., Tripisciano, C., and Weber, V. (2021): Comparative analysis of platelet-derived extracellular vesicles using flow cytometry and nanoparticle tracking analysis. *International Journal of Molecular Sciences*, Apr 7,22(8):3839. <https://doi.org/10.3390/ijms22083839>

Pilecky, M., Závorka, L., Arts, M.L., and Kainz, M.J. (2021): Omega-3 PUFA Profoundly affect neural, physiological, and behavioral competences – Implications for systemic changes in trophic interactions. *Biological Reviews Cambridge Philosophical Society*, May 20. <https://doi.org/10.1111/brv.12747>

Rock G, Weber V, Stegmayr B. (2021): Therapeutic plasma exchange (TPE) as a plausible rescue therapy in severe vaccine-induced immune thrombotic thrombocytopenia. *Transfusion and Apheresis Sciences*, May 28:103174. <https://doi.org/10.1016/j.transci.2021.103174>

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Hohensinner, P.J.; Mayer, J.; Kichbacher, J.; Kral-Pointner, J.; Thaler, B.; Kaun, C.; Hell, L.; Haider, P.; Mussbacher, M.; Schmid, J.A.; Stojkovic, S.; Demyanets, S.; Fischer, M.B.; Huber, K.; Wöran, K.; Hengstenberg, C.; Speidl, W.S.; Oehler, R.; Pabinger, I.; Wojta, J. (2021). Alternative activation of human macrophages enhances tissue factor expression and production of extracellular vesicles. *Haematologica*, 106(2): 454-463

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Karuthedom George, S.; Lauková, L.; Weiss, R.; Semak, V.; Fendl, B.; Weiss, V.U.; Steinberger, S.; Allmaier, G.; Tripisciano, C.; and Weber, V. (2021). Comparative analysis of platelet-derived extracellular vesicles using flow cytometry and nanoparticle tracking analysis. *Int. J. Mol. Sci.*, 22(8): 3839

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Strobl, K.; Harm, S.; Fichtinger, U.; Schildböck, C.; Hartmann, J. (2021). Impact of anion exchange adsorbents on regional citrate anticoagulation. *Int J Artif Organs*, 44(3): 149-155

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Paqué, P.N., Herz, C., Wiedemeier, D.B., Mitsakakis, K., Attin, T., Bao, K., Belibasakis, G.N., Hays, J.P., Jenzer, J.S., Kaman, W.E., Karpíšek, M., Körner, P., Peham, J.R., Schmidlin, P.R., Thurnheer, T., Wegehaupt, F.J., Bostanci, N. (2021): Salivary Biomarkers for Dental Caries Detection and Personalized Monitoring. *J. Pers. Med.*, 11(3), 235. DOI: [10.3390/jpm11030235](https://doi.org/10.3390/jpm11030235)

INSTITUTE FOR MEDICAL RESEARCH & OCCUPATIONAL HEALTH (IMI)

Murugadoss, S., Vinković Vrček, I., Pem, B., Jagiello, K., Judzinska, B., Sosnowska, A., Martens, M., Willighagen, E.L., Puzyn, T., Dusinska, M. et al. (2021) A strategy towards the generation of testable adverse outcome pathways for nanomaterials. ALTEX-Alternatives to Animal Experimentation. <https://doi.org/10.14573/altex.2102191>

Opačak, S., Babić, D., Perić, B., Marinić, Ž., Smrečki, V., Pem, B., Vinković Vrček, I., Kirin, S.I. (2021) A ferrocene-based pseudopeptide chiroptical switch. *Dalton transactions*, 13, 4504-4511. <https://doi.org/10.1039/D1DT00508A>

Murugadoss S, Vinković Vrček I, Pem B, Jagiello K, Judzinska B, Sosnowska A, Martens M, Willighagen EL, Puzyn T, Dusinska M, Cimpan MR, Fessard V, Hoet PH (2021). A strategy towards the generation of testable adverse outcome pathways for nanomaterials. *ALTEX - Alternatives to animal experimentation*. doi: 10.14573/altex.2102191.

INSTITUTE FOR MEDICAL RESEARCH AND OCCUPATIONAL HEALTH, NanoBioFaces group

Barbir, R., Capjak, I., Crnković, T., Debeljak, Ž., Domazet Jurašin, D., Čurlin, M., Šinko, G., Weitner, T., Vinković Vrček, I. (2021). Interaction of silver nanoparticles with plasma transport proteins: A systematic study on impacts of particle size, shape and surface functionalization. *Chemico-Biological Interactions*, 335, 109364. <https://doi.org/10.1016/j.cbi.2020.109364>

Barbir, R., Pem, B., Kalčec, N., Kastner, S., Podlesnaia, K., Csáki, A., Fritzsche, W., Vinković Vrček, I. (2021). Application of Localized Surface Plasmon Resonance Spectroscopy to Investigate a Nano–Bio Interface. *Langmuir*, 37(5), 1991–2000. <https://doi.org/10.1021/acs.langmuir.0c03569>

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JOANNEUM RESEARCH

Proksch, A., Smolka, M., Haase A., Nees D., Ruttloff, St., Goetz, J., Wolf, Ch., Hierschlagler B., Katzmayr, I., Sonnleitner, M., Stadlober, B., Hesse, J. Lab-on-a-foil devices with integrated retro-reflective structures for multiplexed DNA testing Pelin Toren. Accepted: 4 May 2021, *MRS Advances*.

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Lovrić, M., Malev, O., Klobučar, G., Kern, R., Liu, J. J., & Lučić, B. (2021). Predictive Capability of QSAR Models Based on the CompTox Zebrafish Embryo Assays: An Imbalanced Classification Problem.

Molecules, 26(6), 1617. <https://doi.org/10.3390/molecules26061617>

Lovrić, M., Pavlović, K., Žuvela, P., Spataru, A., Lučić, B., Kern, R., & Wong, M. W. (2021). Machine learning in prediction of intrinsic aqueous solubility of drug-like compounds: Generalization, complexity, or predictive ability? *Journal of Chemometrics*, e3349.

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NOVAMECHANICS – NanoSolveIT project

Recent publications from NanoSolveIT project

(contact: Dr. Antreas Afantitis afantitis@novamechanics.com - www.novamechanics.com - *This project has received funding from the EU's H2020 research and innovation programme under the grant agreement n°814572.*)



Cheimarios, N., Harrison, S., Jensen, A.C.Ø., Karatzas, P., Tsoumanis, A., Doganis, P., Tsiros, P., Winkler, D.A., Lofts, S., Jensen, K.A., Sarimveis, H., Afantitis, A., Lynch, I., Melagraki, G., "NanoSolveIT integration of tools for assessment of human and environmental exposure to nanomaterials", accepted for publication (2021).

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Saarimäki, L.A., Federico, A., Lynch, I. et al. Manually curated transcriptomics data collection for toxicogenomic assessment of engineered nanomaterials. *Sci Data* 8, 49 (2021). <https://doi.org/10.1038/s41597-021-00808-y>

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Martens, M., Ammar, A., Riutta, A., Waagmeester, A., Slenter, D. N., Hanspers, K., ... & Kutmon, M. (2021). WikiPathways: connecting communities. *Nucleic Acids Research*, 49(D1), D613-D621. <https://doi.org/10.1093/nar/gkaa1024>

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PMU – PARACELSUS MEDIZINISCHE PRIVATUNIVERSITÄT

Atta, G., Schroedl, F., Kaser-Eichberger, A., Spitzer, G., Traweger, A., Heindl, L. M., & Tempfer, H. (2021). Scleraxis expressing scleral cells respond to inflammatory stimulation. *Histochem Cell Biol.* <https://doi.org/10.1007/s00418-021-01985-y>

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Wang, T., Wagner, A., Gehwolf, R., Yan, W., Passini, F. S., Thien, C., Weissenbacher, N., Lin, Z., Lehner, C., Teng, H., Wittner, C., Zheng, Q., Dai, J., Ni, M., Wang, A., Papadimitriou, J., Leys, T., Tuan, R. S., Senck, S., Snedeker, J. G., Tempfer, H., Jiang, Q., Zheng, M. H., & Traweger, A. (2021). Load-induced regulation of tendon homeostasis by SPARC, a genetic predisposition factor for tendon and ligament injuries. *Sci Transl Med*, 13(582). <https://doi.org/10.1126/scitranslmed.abe5738>

PROFACTOR

Muehlberger, M., Ruttloff, S., Nees, D., Moharana, A., Belegatis, M. R., Taus, P., ... Fechtig, D. (2021). Nanoimprint Replication of Biomimetic, Multilevel Undercut Nanostructures. *Nanomaterials*, 11(4), 1051. [doi:10.3390/nano11041051](https://doi.org/10.3390/nano11041051)

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Prinz, I., Haslinger, M. J., Mühlberger, M., Reiter, G., Prinz, A., Schmidt, M. M., Schaller, T., Bauer, M., Musso, M., & Bauer, G. (2021). Industrial view of plasmonic devices made by nanoimprint or injection molding. *Journal of Applied Physics*, 129(13), 130902. <https://doi.org/10.1063/5.0039152>

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Bruockl, H., Shoshi, A., Schrittwieser, S., Schmid, B., Schneeweiss, P., Mitteramskogler, T., Haslinger, M. J., Muehlberger, M., & Schotter, J. (2021). Nanoimprinted multifunctional nanoprobe for a homogeneous immunoassay in a top-down fabrication approach. *Scientific Reports*, 11(1), 6039. <https://doi.org/10.1038/s41598-021-85524-8>

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RCPE – Research Center for Pharmaceutical Engineering

YuLiua, G.; JieXua, W.; Govender, N.; Wilkec, D. (2021): Simulation of rock fracture process based on GPU-accelerated discrete element method. *Powder Technology*. <https://doi.org/10.1016/j.powtec.2020.09.009>

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