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SISSEJUHATUS

Alljärgnev 2021. aasta publikatsioonide nimekiri on koostatud akadeemikute aastaaruannetes esitatud materjalide alusel. Publikatsioonid on liigitatud rubriikideks:

- raamatud ja muud iseseisvad väljaanded, kus akadeemikud esinevad autorite, koostajate või toimetajatena;
- artiklid teaduslikes ajakirjades ja kogumikes;
- artiklid populaarteaduslikes ja publitsistlikes ajakirjades ning artiklikogumikes;
- elektroonilised publikatsioonid; patendid.

Nimekirjas pole konverentsiettekannete teese ning ajalehtedes avaldatud materjale.

Jaan AARIK

Aarik, L., Mändar, H., Ritslaid, P., Tarre, A., Kozlova, J., Aarik, J. Low-temperature atomic layer deposition of α -Al₂O₃ thin films. – Crystal Growth & Design, 2021, 21 (7), 4220–4229. doi:10.1021/acs.cdg.1c00471

Aarik, L., Peetermann, K., Puust, L., Mändar, H., Kikas, A., Sildos, I., Aarik, J. Atomic-layer design and properties of Pr-doped HfO₂ thin films. – Journal of Alloys and Compounds, 2021, 868, 159100. doi:10.1016/j.jallcom.2021.159100

Möls, K., Aarik, L., Mändar, H., Kasikov, A., Jõgiaas, T., Tarre, A., Aarik, J. Influence of α -Al₂O₃ template and process parameters on atomic layer deposition and properties of thin films containing high-density TiO₂ phases. – Coatings, 2021, 11 (11), 1280. doi:10.3390/coatings11111280

Olav AARNA

Aarna, O., Riitsalu, L., Venesaar, U. Finantspädevuse kui elukestva õpppe võtmepädevuse raamistik. – Eesti Haridusteaduste Ajakiri, 2021, 9 (2), 155–183. doi:10.12697/eha.2021.9.2.07

Jüri ALLIK

Allik, J., Raidvee, A. Proximity model of perceived numerosity. – Attention Perception & Psychophysics, 2021, 83 (5), 2061–2070. doi:10.3758/s13414-021-02252-x

Ausmees, L., Talts, M., Allik, J., Vainik, U., Sikka, T.T., Nikopensius, T., . . . Realo, A. Taking risks to feel excitement: Detailed personality profile and genetic associations. – European Journal of Personality, 2021, 26. doi:10.1177/08902070211019242

Kulkarni, K., Corneanu, C.A., Ofodile, I., Escalera, S., Baro, X., Hyniewska, S., . . . Allik, J., . . . , Anbarjafari, G. Automatic recognition of facial displays of unfelt emotions. – IEEE Transactions on Affective Computing, 2021, 12 (2), 377–390. doi:10.1109/taffc.2018.2874996

Lenneis, A., Das-Friebel, A., Singmann, H., Teder-Laving, M., Lemola, S., Wolke, D., ..., Allik, J., ..., Realo, A. Intraindividual variability and temporal stability of mid-sleep on free and workdays. – *Journal of Biological Rhythms*, 2021, 36 (2), 169–184.
doi:10.1177/0748730420974842

Lenneis, A., Vainik, U., Teder-Laving, M., Ausmees, L., Lemola, S., Allik, J., Realo, A. Personality traits relate to chronotype at both the phenotypic and genetic level. – *Journal of Personality*, 2021, 89 (6), 1206–1222. doi:10.1111/jopy.12645

Letzring, T.D., Murphy, N.A., Allik, J., Beer, A., Zimmermann, J., Leising, D. The judgment of personality: An overview of current empirical research findings. – *Personality Science*, 2021, 2 (1), 1–20. doi:10.5964/ps.6043

Raidvee, A., Toom, M., Allik, J. A method for detection of inattentional feature blindness. – *Attention Perception & Psychophysics*, 2021, 83 (3), 1282–1289. doi:10.3758/s13414-020-02234-5

Jaan EHA

Ainla, T., Eha, J., Marandi, T., Veldre, G., Saar, A., Löiveke, P. Gender differences in characteristics, treatment and outcomes in ST elevation myocardial infarction patients in four European countries. – *European Heart Journal*, 2021, 42: European Society of Cardiology Congress 2021, 1114. (Supplement).

Blöndal, M., Ainla, T., Eha, J., Löiveke, P., Marandi, T., Saar, A., ..., Jánosi, A. Comparison of management and outcomes of ST-segment elevation myocardial infarction patients in Estonia, Hungary, Norway and Sweden according to national ongoing registries. – *European Heart Journal – Quality of Care and Clinical Outcomes*, 2021, qcaa098. doi:10.1093/ehjqcco/qcaa098

Edfors, R., Jernberg, T., Lewinter, C., Blöndal, M., Eha, J., Löiveke, P., ..., Halvorsen, S. Differences in characteristics, treatments and outcomes in patients with non-ST-elevation myocardial infarction -novel insights from four national European continuous real-world registries. – *Ibid.*, qcab013. doi:10.1093/ehjqcco/qcab013

Jürgenson, J., Serg, M., Kampus, P., Kals, J., Zagura, M., Zilmer, K., ..., Eha, J., Unt, E. Effect of half-marathon running on arterial stiffness and blood biomarkers in high-level and recreational male athletes. – *Journal of Sports Science and Medicine*, 2021, 20, 548–556. doi:10.52082/jssm.2021.548

Kuusik, K., Kasepalu, T., Zilmer, M., Eha, J., Vähi, M., Torop, L.A., Lieberg, J., Kals, J. The role of RIPC in preventing organ damage, inflammation and oxidative stress during lower limb DSA: A randomised controlled trial. – *Oxidative Medicine and Cellular Longevity*, 2021, 6043550. doi:10.1155/2021/6043550

Löiveke, P., Marandi, T., Ainla, T., Fischer, K., Eha, J. Adherence to recommendations for secondary prevention medications after myocardial infarction in Estonia: Comparison of real-world data from 2004 to 2005 and 2017 to 2018. – *BMC Cardiovascular Disorders*, 2021, 21, 105. doi:10.1186/s12872-021-02321-x

Pauklin, P., Eha, J., Tootsi, K., Kolk, R., Paju, R., Kals, M., Kampus, P. Atrial fibrillation is associated with increased central blood pressure and arterial stiffness. – Journal of Clinical Hypertension, 2021, 1581–1587. doi:10.1111/jch.14323

* * *

Eha, J. 40 aastat ägeda müokardiinfarkti reperfusioonravi Eestis. – Eesti Arst, 2021, 12, 717–720.

Kõre, A.C., Eha, J. Tartu Ülikooli Kliinikumi kardiokirurgilise konsiiliumi tööst aastatel 2009–2018. – Eesti Arst, 2021, 100 (8), 413–420.

Jaan EINASTO

Einasto, J. Biasing phenomenon. – Astronomy Reports, 2021, 65, 926.

Einasto, J. Structure and evolution of regular Galaxies. – arXiv.org, 2021, arXiv:2112.08969.

Einasto, J., Hütsi, G., Einasto, M. Correlation functions in 2D and 3D as descriptorsof the cosmic web. – A&A, 2021, 652, A152. doi:10.1051/0004-6361/202038106

Einasto, J., Hütsi, G., Suhhonenko, I., Liivamägi, L. J., Einasto, M. Evolution ofsuperclusters and supercluster cocoons in various cosmologies. – A&A, 2021, 647, A17. doi:10.1051/0004-6361/202038358

Einasto, J., Klypin, A., Hütsi, G., Liivamägi, L.J., Einasto, M. Evolution of skewnessand kurtosis of cosmic density fields – A&A, 2021, 652, A94. doi:10.1051/0004-6361/202039999

Einasto, M., Kipper, R., Tenjes, P., Lietzen, H., Tempel, E., Liivamägi, L.J., Einasto, J., . . . , Nurmi, P. The Corona Borealis supercluster: Connectivity, collapse, and evolution. – A&A, 2021, 649, A51.doi:10.1051/0004-6361/202040200

Jüri ENGELBRECHT

Engelbrecht, J. Complexity in Social Systems and Academies. – Newcastle : Cambridge Scholars Publishing, 2021. – 201 p. – ISBN 978-1-5275-7309-3

Engelbrecht, J. Juhuslikud jalutuskäigud teadusmetsas. – Tallinn : Postimehe Kirjastus, 2021. – 174 lk. – ISBN 978-9916-667-26-2

Engelbrecht, J., Tamm, K., Peets, T. Annual Report 2020 on Nonlinear Dynamics and Biophysics. RR Mech 327/21. – Tallinn : Tallinn University of Technology, School of Science, Dept. of Cybernetics, 2021.

Engelbrecht, J., Tamm, K., Peets, T. Modelling of Complex Signals in Nerves. – Cham : Springer, 2021. – 186 p. – ISBN 978-3-030-75038-1

* * *

Engelbrecht, J., Tamm, K., Peets, T. Continuum mechanics and signals in nerves. – Proceedings of the Estonian Academy of Sciences, 2021, 70, 1, 3–18. doi:10.3176/proc.2021.1.02

Peets, T., Tamm, K., Engelbrecht, J. On physical background of nerve pulse propagation: Heat and energy. – Journal of Non-Equilibrium Thermodynamics, 2021, 46 (4), 343–353. doi:10.1515/jnet-2021-0007

Tamm, K., Peets, T., Engelbrecht, J. Mechanical waves in myelinated axon wall. – arXiv 2112.11116v1 [physics.bio-ph], 2021.

* * *

Engelbrecht, J. Academies and knowledge management. – Cadmus, 2021, 4 (4), 56–57.

Engelbrecht, J. Global system dynamics and future. – Glasnik (The Montenegrin Academy of Sciences and Arts, Dept. of Social Sciences), 2021, 25, 237-248.

Engelbrecht, J. Loodus ja füüsika (Nature and physics). – Tähenduse teejuhid, 2021, 8, 9.

Engelbrecht, J. Saatesõna. – Tiivel, T. Elu on sümbioos. Ilmamaa, Tartu, 2021, 7–9.

Engelbrecht, J. Zlatá Praha – útržky vzpomínek. – NaVychod. Special: Estonsko, 2021, 27–28. (Czech-Estonian Special Issue: Golden Prague – looking back)

Engelbrecht, J., Tamm, K., Peets, T. Närviimpulss ja matemaatika. – Horisont, 2021, 3, 48–52.

Engelbrecht, J., Kitt, R. Knowledge generation and interdisciplinarity. – Cadmus, 2021, 4 (5), 11–22.

Järv, J., Engelbrecht, J. Proceedings of the Estonian Academy of Sciences celebrates volume 70. – Proceedings of the Estonian Academy of Sciences, 2021, 70, 1, 1–2. doi:10.3176/proc.2021.1.05

Krista FISCHER

Aasmets, O., Lull, K., Lang, J.M., Pan, C., Kuusisto, J., Fischer, K., … , Org, E. Machine learning reveals time-varying microbial predictors with complex effects on glucose regulation. – mSystems, 2021, 6 (1), e01191-20. doi:10.1128/mSystems.01191-20

Barahona Ponce, C., Scherer, D., Brinster, R., Boekstegers, F., Marcelain, K., Gárate, V., … , Fischer, K., … , Lorenzo Bermejo, J. Gallstones, body mass index, C-reactive protein and gallbladder cancer – Mendelian Randomization Analysis of Chilean and European Genotype Data. Hepatology, 2021, 73 (5), 1783–1796. doi:10.1002/hep.31537

Iurilli, M.L.C., Zhou, B., Bennett, J., Carrillo-Larco, R.M., Sophiea, M.K., Rodriguez-Martinez, A., …, Fischer, K., …, Filippi, S. Heterogeneous contributions of change in population distribution of body mass index to change in obesity and underweight NCD Risk Factor Collaboration (NCD-RisC). – eLife, 2021, 10 (e60060), e60060. doi:10.7554/eLife.60060

Lõiveke, P., Marandi, T., Ainla, T., Fischer, K., Eha, J. Adherence to recommendations for secondary prevention medications after myocardial infarction in Estonia: Comparison of real-world data from 2004 to 2005 and 2017 to 2018. – BMC Cardiovascular Disorders, 2021, 21, 105. doi:10.1186/s12872-021-02321-x

Munn-Chernoff, M.A., Johnson, E.C., Chou, Y.-L., Coleman, J.R.I., Thornton, L.M., Walters, R.K., ... , Fischer, K., ... , Agrawal, A. Shared genetic risk between eating disorder- and substance-use-related phenotypes: Evidence from genome-wide association studies. – Addiction Biology, 2021, 26 (1), e12880. doi:10.1111/adb.12880

Ojavee, S.E., Kousathanas, A., Trejo Banos, D., Orliac, E.J., Patxot, M., Laell, K., ... , Fischer, K., ... , Robinson, M.R. Genomic architecture and prediction of censored time-to-event phenotypes with a Bayesian genome-wide analysis. – Nature Communications, 2021, 12 (1), 2337. doi:10.1038/s41467-021-22538-w

Prins, B.P., Leitsalu, L., Pärna, K., Fischer, K., Metspalu, A., Haller, T., Snieder, H. Advances in genomic discovery and implications for personalized prevention and medicine: Estonia as example. – Journal of Personalized Medicine, 2021, 11 (5), 358. doi:10.3390/jpm11050358

Reintam Blaser, A., Padar, M., Mändul, M., Elke, G., Engel, C., Fischer, K., ... , Starkopf, J. Development of the gastrointestinal dysfunction score (GIDS) for critically ill patients – A prospective multicenter observational study (iSOFA study). – Clinical Nutrition, 2021, 40 (8), 4932–4940. doi:10.1016/j.clnu.2021.07.015

Taba, N., Valge, H.-K., Metspalu, A., Esko, T., Wilson, J.F., Fischer, K., Pirastu, N. Mendelian randomization identifies the potential causal impact of dietary patterns on circulating blood metabolites. – Frontiers in Genetics, 2021, 12, 738265. doi:10.3389/fgene.2021.738265

Vojinovic, D., Kalaoja, M., Trompet, S., Fischer, K., Shipley, M.J., Li, S., ... , van Duijn, C.M. Association of circulating metabolites in plasma or serum and risk of stroke. – Neurology, 2021, 96 (8), e1110–e1123. doi:10.1212/WNL.00000000000011236

Arvi FREIBERG

Timpmann, K., Linnanto, J.M., Yadav, D., Kangur, L., Freiberg, A. Hydrostatic high-pressure-induced denaturation of LH2 membrane proteins. – The Journal of Physical Chemistry B, 2021, 125, 9979–9989. doi:10.1021/acs.jpcb.1c05789

Timpmann, K., Rätsep, M., Kangur, L., Lehtmets, A., Wang-Otomo, Z.-Y., Freiberg, A. Exciton origin of color-tuning in Ca²⁺-binding photosynthetic bacteria. – The International Journal of Molecular Sciences, 2021, 22, 7338. doi:10.3390/ijms22147338

Vladimir HIŽNJAČOV

Hizhnyakov, V., Boltrushko, V., Benedek, G. Thermal broadening of the zero-phonon line in superfluid helium. – Physical Review B, 2021, 103 (21), 214515. doi:10.1103/PhysRevB.103.214515

Hizhnyakov, V., Boltrushko, V., Kaasik, H., Orlovskii, Y. Rare earth ions doped mixed crystals for fast quantum computers with optical frequency qubits. – Optics Communications, 2021, 485, 126693. doi:10.1016/j.optcom.2020.126693

Hizhnyakov, V., Boltrushko, V., Shelkan, A., Orlovskii, Yu. Fast qubits of optical frequencies on the rare-earth ions in fluoride crystals and color centers in diamond. – arXiv:2103.13319v1 [quant-ph], 2021.

Vinogradova, E., Dolgov, L., Konyushkin, V.A., Orlovskaya, E.O., Vagapova, E., Treshchalov, A., Peet, V., Hizhnyakov, V., Orlovskii, Yu.V. Fluorescence of Nd³⁺ optical centers close to cubic symmetry in a calcium fluoride crystal co-doped with Na⁺. – Journal of Luminescence, 2021, 234, 117988. doi:10.1016/j.jlumin.2021.117988

Jaak JÄRV

Mastitski, A., Troska, A., Järv, J. Synthesis of N-omega, N-omega-di-Boc-3-guanidylpropanal – an important reagent for synthesis of aza-Arg precursors. – Organic Preparations and Procedures International, 2021, 53 (5), 472–478.
doi:10.1080/00304948.2021.1967022

Troska, A., Arujõe, M., Mastitski, A., Järv, J., Ploom, A. Steric impact of aza-amino acid on solid-phase aza-peptide bond synthesis. – Tetrahedron Letters, 2021, 69, 152973.
doi:10.1016/j.tetlet.2021.152973

* * *

Järv, J., Engelbrecht, J. Proceedings of the Estonian Academy of Sciences celebrates volume 70. – Proceedings of the Estonian Academy of Sciences, 2021, 70 (1), 1-2.
doi:10.3176/proc.2021.1.05

* * *

Babichenko, S., Jarv, J., Kuznetsov, A., Mastitski, A. Selective optical detection of organic analytes in liquids. United States Patent Application Publication No: US 2021/0356463 A1, November 18, 2021.

Anne KAHRU

Bartkova, S., Kahru, A., Heinlaan, M., Scheler, O. Techniques used for analyzing microplastics, antimicrobial resistance and microbial community composition: A mini-review. – Frontiers in Microbiology, 2021, 12, 603967. doi:10.3389/fmicb.2021.603967

Blinova, I., Lukjanova, A., Reinik, J., Kahru, A. Concentration of lanthanides in the Estonian environment: a screening study. – Journal of Hazardous Materials Advances, 2021, 4, 100034. doi:10.1016/j.hazadv.2021.100034

Blinova, I., Lukjanova, A., Vija, H., Kahru, A. Long-term toxicity of gadolinium to the freshwater crustacean *Daphnia magna*. – Bulletin of Environmental Contamination and Toxicology, 2021. doi:10.1007/s00128-021-03388-0

Bondarenko, L., Terekhova, V., Kahru, A., Dzhardimalieva, G., Kelbysheva, E., Tropskaya, N., Kydralieva, K. Sample preparation considerations for surface and crystalline properties and ecotoxicity of bare and silica-coated magnetite nanoparticles. – RSC Advances, 2021, 11 (51), 32227–32235. doi:10.1039/D1RA05703K

Bondarenko, O., Mortimer, M., Kahru, A., Feliu, N., Javed, I., Kakinen, A., . . . , Zhao, Y. Nanotoxicology and nanomedicine: The Yin and Yang of nano-bio interactions for the new decade. – Nano Today, 2021, 39, 101184. doi:10.1016/j.nantod.2021.101184

Joonas, E., Olli, K., Kahru, A., Aruoja, V. Biodiversity and functional trait effects on copper toxicity in a proof-of-concept multispecies microalgal assay. – *Algal Research*, 2021, 55 (102204). doi:10.1016/j.algal.2021.102204

Kahru, A., Mortimer, M. Advances in nanotoxicology: Towards enhanced environmental and physiological relevance and molecular mechanisms. – *Nanomaterials*, 2021, 11 (4), 919. doi:10.3390/nano11040919

Khosrovyan, A., Kahru, A. Evaluation of the potential toxicity of UV-weathered virgin polyamide microplastics to non-biting midge *Chironomus riparius*. – *Environmental Pollution*, 2021, 287, 117334. doi:10.1016/j.envpol.2021.117334

Konrad, N., Horetski, M., Sihtmäe, M., Truong, K.-N., Osadchuk, I., Burankova, T., …, Kahru, A., …, Kananovich, D. Thiourea organocatalysts as emerging chiral pollutants: En route to porphyrin-based (chir)optical sensing. – *Chemosensors*, 2021, 9 (10). doi:10.3390/chemosensors9100278

Kusumahastuti, D.K.A., Sihtmäe, M., Aruoja, V., Gathergood, N., Kahru, A. Ecotoxicity profiling of a library of 24 l-phenylalanine derived surface-active ionic liquids (SAILs). – *Sustainable Chemistry and Pharmacy*, 2021, 19, 100369. doi:10.1016/j.scp.2020.100369

Vihodceva, S., Šutka, A., Sihtmäe, M., Rosenberg, M., Otsus, M., Kurvet, I., …, Kahru, A., Kasemets, K. Antibacterial activity of positively and negatively charged hematite (α -Fe₂O₃) nanoparticles to *Escherichia coli*, *Staphylococcus aureus* and *Vibrio fischeri*. – *Nanomaterials*, 2021, 11 (3), 652. doi:10.3390/nano11030652

* * *

Kahru, A. Naised teaduses koroona-ajal, ent mitte ainult sellest. – Marling, R., Sander, K., Raju, M., Pajumets, M. Teel tasakaalustatud ühiskonda III. Naised ja mehed Eestis. Tallinn, 2021, 196–198. <https://vordsuskeskus.ee/sites/default/files/2021-11/TEEL%20TASAKAALUSTATUD%20ÜHISKONDA%20III.pdf>

Mati KARELSON

Ivanova, L., Rausalu, K., Ošeka, M., Kananovich, D.G., Žusinaite, E., Tammiku-Taul, J., …, Karelson, M. Novel analogues of the Chikungunya virus protease inhibitor: Molecular design, synthesis, and biological evaluation. – *ACS Omega*, 2021, 6 (16), 10884–10896. doi:10.1021/acsomega.1c00625

Ivanova, L., Rausalu, K., Žusinaite, E., Tammiku-Taul, J., Merits, A., Karelson, M. 1,3-thiazolbenzamide derivatives as Chikungunya virus nsP2 protease inhibitors. – *ACS Omega*, 2021, 6 (8), 5786–5794. doi:10.1021/acsomega.0c06191

Renko, J.-M., Mahato, A.K., Visnapuu, T., Valkonen, K., Karelson, M., Voutilainen, M.H., …, Sidorova, Y.A. Neuroprotective potential of a small molecule RET agonist in cultured dopamine neurons and hemiparkinsonian rats. – *Journal of Parkinson's Disease*, 2021, 11, 1023–1046. doi:10.3233/JPD-202400

Selberg, S., Seli, N., Kankuri, E., Karelson, M. Rational design of novel anticancer small-molecule RNA m6A demethylase ALKBH5 inhibitors. – ACS Omega, 2021, 6 (20), 13310–13320. doi:10.1021/acsomega.1c01289

Selberg, S., Žusinaite, E., Herodes, K., Seli, N., Kankuri, E., Merits, A., Karelson, M. HIV replication is increased by RNA methylation METTL3/METTL14/WTAP complex activators. – ACS Omega, 2021, 6 (24), 15957–15963. doi:10.1021/acsomega.1c01626

Selberg, S., Yu, L.-Y., Bondarenko, O., Kankuri, E., Seli, N., Kovaleva, V., …, Karelson, M. Small-molecule inhibitors of the RNA M6A demethylases FTO potently support the survival of dopamine neurons. – International Journal of Molecular Sciences, 2021, 22 (9), 4537. doi:10.3390/ijms22094537

Sikorski, V., Karjalainen, P., Blokhina, D., Oksaharju, K., Khan, J., Katayama, S., …, Karelson, M., …, Kankuri, E. Epitranscriptomics of ischemic heart disease – The IHD-EPITRAN study design and objectives. – International Journal of Molecular Sciences, 2021, 22, 6630. doi:10.3390/ijms22126630

Marco KIRM

Chernenko, K., Kivimäki, A., Pärna, R., Wang, W., Sankari, R., Leandersson, M., …, Kirm, M., Huttula, M. Performance and characterization of the FinEstBeAMS beamline at the MAX IV Laboratory. – Journal of Synchrotron Radiation, 2021, 28, 1620–1630. doi:10.1107/S1600577521006032

Gundacker, S., Pots, R.H., Nepomnyashchikh, A., Radzhabov, E., Shendrik, R., Omelkov, S., Kirm, M., … Auffray, E. Vacuum ultraviolet silicon photomultipliers applied to BaF₂ cross-luminescence detection for high-rate ultrafast timing applications. – Physics in Medicine and Biology, 2021, 66 (11), 114002. doi:10.1088/1361-6560/abf476

Ivanovskikh, K.V., Pustovarov, V.A., Omelkov, S., Kirm, M., Piccinelli, F., Bettinelli, M. Phase transition, radio- and photoluminescence of K₃Lu(PO₄)₂ doped with Pr³⁺ ions. – Journal of Luminescence, 2021, 230, 117749. doi:10.1016/j.jlumin.2020.117749

Saaring, J., Vanetsev, A., Chernenko, K., Feldbach, E., Kudryavtseva, I., Mändar, H., …, Kirm, M. Relaxation of electronic excitations in K₂GeF₆ studied by means of time-resolved luminescence spectroscopy under VUV and pulsed electron beam excitation. – Journal of Alloys and Compounds, 883, 160916. doi:10.1016/j.jallcom.2021.160916

Trofimova, E., Omelkov, S., Romet, I., Kirm, M., Pustovarov, V., Piccinelli, F. Luminescence properties and energy transfer processes in LiSrPO₄ doped with Pr³⁺ and co-doped with Na⁺ and Mg²⁺. – Journal of Luminescence, 2021, 240, 118455. doi:10.1016/j.jlumin.2021.118455.

Vanetsev, A., Pödder, P., Oja, M., Khaidukov, N.M., Makhov, V.N., Nagirnyi, V., …, Kirm, M. Microwave-hydrothermal synthesis and investigation of Mn-doped K₂SiF₆ microsize powder as a red phosphor for warm white LEDs. – Journal of Luminescence, 2021, 239, 118389. doi:10.1016/j.jlumin.2021.118389

Wilska, P., Sobolev, I., Rebane, O., Poryvkina, L., Kirm, M., Hakkarainen, H., Babichenko, S. Real-time monitoring of hydrogen peroxide vapour decontamination of bacterial spores by

means of UV fluorimetry. – Proceedings of the Estonian Academy of Sciences, 2021, 70 (1), 51–61. doi:10.3176/proc.2021.1.06

Kalle KIRSIMÄE

Blättler, C.L., Hong, W.L., Kirsimäe, K., Higgins, J.A., Lepland, A. Small calcium isotope fractionation at slow precipitation rates in methane seep authigenic carbonates. – *Geochimica et Cosmochimica Acta*, 2021, 298, 227–239. doi:10.1016/j.gca.2021.01.001

Hao, W.D., Mänd, K., Li, Y.H., Alessi, D.S., Somelar, P., Moussavou, M., … , Kirsimäe, K., … , Konhauser, K.O. The kaolinite shuttle links the Great Oxidation and Lomagundi events. – *Nature Communications*, 2021, 12, 2944. doi:10.1038/s41467-021-23304-8

Laidmae, I., Meos, A., Kjaervik, I.A., Ingebrigtsen, S.G., Skalko-Basnet, N., Kirsimäe, K., … , Kogermann, K. Electrospun amphiphilic nanofibers as templates for in situ preparation of chloramphenicol-loaded liposomes. – *Pharmaceutics*, 2021, 13, 1742. doi:10.3390/pharmaceutics13111742

Leben, K., Mõtlep, R., Konist, A., Pihu, T., Kirsimäe, K. Carbon dioxide sequestration in power plant Ca-rich ash waste deposits. – *Oil Shale*, 2021, 38, 65-88. doi:10.3176/oil.2021.1.04

Lumiste, K., Lang, L., Paiste, P., Lepland, A., Kirsimäe, K. Heterogeneous REE plus Y distribution in Early Paleozoic shelly phosphorites: Implications for enrichment mechanisms. – *Chemical Geology*, 2021, 586, 120590. doi:10.1016/j.chemgeo.2021.120590

Lumiste, K., Mänd, K., Bailey, J., Stueken, E.E., Paiste, K., Lang, L.S., … , Kirsimäe, K. Constraining the conditions of phosphogenesis: Stable isotope and trace element systematics of Recent Namibian phosphatic sediments. – *Geochimica et Cosmochimica Acta*, 2021, 302, 141–159. doi:10.1016/j.gca.2021.03.022

Mayika, K.B., Moussavou, M., Prave, A.R., Lepland, A., Mbina, M., Kirsimäe, K. The Paleoproterozoic Francevillian succession of Gabon and the Lomagundi-Jatuli event: REPLY. – *Geology*, 2021, 49, E528-E528. doi:10.1130/G49218Y.1

Mänd, K., Lalonde, S.V., Paiste, K., Thobey, M., Lumiste, K., Robbins, L.J., … , Kirsimäe, K., … , Konhauser, K.O. Iron isotopes reveal a benthic iron shuttle in the Palaeoproterozoic Zaonega Formation: Basinal Restriction, Euxinia, and the effect on Global Palaeoredox Proxies. – *Minerals*, 2021, 11, 368. doi:10.3390/min11040368

Paaver, P., Järvik, O., Kirsimäe, K. Design of high volume CFBC fly ash based calcium sulphaaluminate type binder in mixtures with ordinary Portland cement. – *Materials*, 2021, 14. doi:10.3390/ma14195798

Paaver, P., Paiste, P., Liira, M., Kirsimäe, K. Mechanical activation of the Ca-rich circulating fluidized bed combustion fly ash: Development of an alternative binder system. – *Minerals*, 2021, 11, 3. doi:10.3390/min11010003

Tinn, O., Lang, L., Märss, T., Vahur, S., Kirsimäe, K. A demineralized osteostracan fossil from the Silurian Kalana Lagerstatte of Estonia: revealing its internal anatomy and uncovering a unique type of fossilization. – *Lethaia*, 2021, 5798, doi:10.1111/let.12452

Uibu, M., Siirde, A., Järvik, O., Trikkel, A., Yörük, C.R., Nurk, G., Kirsimäe, K., ... , Konist, A. ClimMIT – Climate change mitigation with CCS and CCU technologies. – SSRN Electronic Journal, 2021, 1–9. doi:10.2139/ssrn.3812288

Viidik, L., Vesala, J., Laitinen, R., Korhonen, O., Ketolainen, J., Aruva, J., Kirsimäe, K., ... , Ervasti, T. Preparation and characterization of hot-melt extruded polycaprolactone-based filaments intended for 3D-printing of tablets. – European Journal of Pharmaceutical Sciences, 2021, 158, 105619. doi:10.1016/j.ejps.2020.105619

* * *

Ainsaar, L., Menert, A., Lust, E., Tõnsuaadu, K., Kirsimäe, K. Oleviku- ja tulevikumaavarade uuringud Eestis: RITA MAARE. – Riigikogu Toimetised, 2021, 44, 69–78.

Maarja KRUUSMAA

Remmas, W., Chemori, A., Kruusmaa, M. Inverse-model intelligent control of fin-actuated underwater robots based on drag force propulsion. – Ocean Engineering, 2021, 239, 109883. doi:10.1016/j.oceaneng.2021.109883

Rätsep, M., Parnell, K.E., Soomere, T., Kruusmaa, M., Ristolainen, A., Tuhtan, J.A. Surface vessel localization from wake measurements using an array of pressure sensors in the littoral zone. – Ocean Engineering, 2021, 233, 109156. doi:10.1016/j.oceaneng.2021.109156

Vihman, L., Kruusmaa, M., Raik, J. Systematic review of fault tolerant techniques in underwater sensor networks. – Sensors, 2021, 3264. doi:10.3390/s21093264

Jarek KURNITSKI

Kurnitski, J., Thalfeldt, M. (eds). Cold Climate HVAC & Energy 2021 : (Cold Climate HVAC & Energy 2021, Tallinn, Estonia, April 18–21, 2021). – EDP Sciences. – 623 p. – (E3S Web of Conferences; 246).

* * *

Aganovic, A., Bi, Y., Cao, G., Drangsholt, F., Kurnitski, J., Wargocki, P. Estimating the impact of indoor relative humidity on SARS-CoV-2 airborne transmission risk using a new modification of the Wells-Riley model. – Building and Environment, 2021, 205, 108278. doi:10.1016/j.buildenv.2021.108278

Ahmed, K., Kurnitski, J. New equation for optimal insulation dependency on the climate for office buildings. – Energies, 2021, 14 (2), 321. doi:10.3390/en14020321

Andersson, M.A., Salo, J., Mikkola, R., Marik, T., Kredics, L., Kurnitski, J., Salonen, H. Melinacidin-producing *Acrostalagmus luteoalbus*, a major constituent of mixed mycobiota contaminating insulation material in an outdoor wall. – Pathogens, 2021, 10 (7), 843. doi:10.3390/pathogens10070843

Kuivjõgi, H., Uutar, A., Kuusk, K., Thalfeldt, M., Kurnitski, J. Market based renovation solutions in non-residential buildings – Why commercial buildings are not renovated to NZEB. – Energy and Buildings, 2021, 248, 111169. doi:10.1016/j.enbuild.2021.111169

Kurnitski, J., Kiil, M., Wargocki, P., Boerstra, A., Seppänen, O., Olesen, B., Morawska, L. Respiratory infection risk-based ventilation design method. – Building and Environment, 2021, 206. doi:10.1016/j.buildenv.2021.108387

Leetsaar, L., Korkiala-Tanttu, L., Jaaniso, V., Kurnitski, J., Idnurm, J. Extent of geotechnical site investigations for buildings in Estonia. – IOP Conference Series: Earth and Environmental Science, 727: Baltic Sea Region Geotechnical Conference, Helsinki, Finland 18–19 Jan 2021. IOP Publishing, 2021. doi:10.1088/1755-1315/727/1/012001

Morawska, L., Allen, J., Bahnfleth, W., Bluyssen, P.M., Boerstra, A., Buonanno, G., … , Kurnitski, J., … , Yao, M. A paradigm shift to combat indoor respiratory infection building ventilation systems must get much better. – Science, 2021, 372 (6543), 689–691. doi:10.1126/science.abg2025

Palmiste, Ü., Meier, T., Kurnitski, J., Voll, H. Experimental testing of exterior wall mounted mechanical ventilation exhaust air outlet devices. – Kurnitski, J., Thalfeldt, M. (eds). E3S Web of Conferences, 246: Cold Climate HVAC ja Energy 2021, Tallinn, Estonia, April 18–21, 2021. EDP Sciences, 2021, 02001. doi:10.1051/e3sconf/202124602001

Võsa, K.-V., Ferrantelli, A., Kurnitski, J. Assessment of downward draught in high-glazing facades in cold climates – experimental and CFD study into draught control with a 21-type radiator. – *Ibid.*, 02002. doi:10.1051/e3sconf/202124602002

Kuivjõgi, H., Kurnitski, J., Uutar, A., Thalfeldt, M. NZEB and market-based renovation case study of an existing office building. – *Ibid.*, 05002. doi:10.1051/e3sconf/202124605002

Pylysy, P., Kurnitski, J. Measured performance of exhaust air heat pumps in Finnish apartment buildings. – *Ibid.*, 06001. doi:10.1051/e3sconf/202124606001

Seyed Salehi, S.S., Ferrantelli, A., Aljas, H.K., Kurnitski, J., Thalfeldt, M. Impact of internal heat gain profiles on the design cooling capacity of landscaped offices. – *Ibid.*, 07003. doi:10.1051/e3sconf/202124607003

Hajian, H., Ahmed, K., Kurnitski, J. Estimation of energy-saving potential and indoor thermal comfort by the central control of the heating curve in old apartment buildings. – *Ibid.*, 09002. doi:10.1051/e3sconf/202124609002

Kull, T.M., Thalfeldt, M., Kurnitski, J. Modelling of wax actuators in underfloor heating manifolds. – *Ibid.*, 11009. doi:10.1051/e3sconf/202124611009

Võsa, K.-V., Ferrantelli, A., Tzanev, D., Simeonov, K., Carnero, P., Espigares, C., … , Kurnitski, J. Building performance indicators and IEQ assessment procedure for the next generation of EPC-s. – *Ibid.*, 13003. doi:10.1051/e3sconf/202124613003

Simson, R., Thomsen, K.E., Wittchen, K.B., Kurnitski, J. A comparative analysis of NZEB energy performance requirements for residential buildings in Denmark, Estonia and Finland. – *Ibid.*, 14001. doi:10.1051/e3sconf/202124614001

Sepulveda, A., De Luca, F., Kurnitski, J. Daylight and overheating prediction formulas for building design in a cold climate. – Journal of Building Engineering, 2021, 45, 103532. doi:10.1016/j.jobe.2021.103532

Tang, J.W., Bahnfleth, W.P., Bluysen, P.M., Buonanno, G., Jimenez, J.L., Kurnitski, J., ..., Dancer, S.J. Dismantling myths on the airborne transmission of severe acute respiratory syndrome coronavirus (SARS-CoV-2). – Journal of Hospital Infection, 2021, 89–96.
doi:10.1016/j.jhin.2020.12.022

* * *

Kurnitski, J., Wargocki, P., Aganovic, A. Relative humidity effects on viruses and human responses. – The REHVA European HVAC Journal, 2021, 58 (6), 7–12.

Simson, R., Thomsen, K.E., Wittchen, K.B., Kurnitski, J. NZEB requirements vs European benchmarks in residential buildings. – The REHVA European HVAC Journal, 2021, 58 (2), 40–44.

Urmas KÕLJALG

Savchenko, A., Zamora, J.C., Shirouzu, T., Spirin, V., Malysheva, V., Kõlalg, U., Miettinen, O. Revision of *Cerinomyces* (*Dacrymycetes*, *Basidiomycota*) with notes on morphologically and historically related taxa. – Studies in Mycology, 2021, 99 (100117), 1–72.
doi:10.1016/j.simyco.2021.100117

Svantesson, S., Kõlalg, U., Wurzbacher, C., Saar, I., Larsson, K.-H., Larsson, E. *Polyozellus* vs. *Pseudotomentella*: generic delimitation with a multi-gene dataset. – Fungal Systematics and Evolution, 2021, 8, 143–154. doi:10.3114/fuse.2021.08.11

Tamme, R., Pärtel, M., Kõlalg, U., Laanisto, L., Liira, J., Mander, Ü., ..., Zobel, M. Global macroecology of nitrogen-fixing plants. – Global Ecology and Biogeography, 2021, 30, 514–526. doi:10.1111/geb.13236

Tedersoo, L., Mikryukov, V., Anslan, S., Bahram, M., Khalid, A.N., Corrales, A., ..., Kõlalg, U., Abarenkov, K. The Global Soil Mycobiome consortium dataset for boosting fungal diversity research. – Fungal Diversity, 2021, 111, 573–588. doi:10.1007/s13225-021-00493-7

Jakob KÜBARSEPP

Kolnes, M., Kübarsepp, J., Sergejev, F., Kolnes, M., Tarraste, M., Viljus, M. Wear behavior of ceramic-metal composites as tool materials for FSW of copper. – Solid State Phenomena, 2021, 320, 144–149. doi:10.4028/www.scientific.net/SSP.320.144

Tarraste, M., Kübarsepp, J., Mere, A., Juhani, K., Kolnes, M., Viljus, M. Ultrafine cemented carbides with cobalt and iron binders prepared via reactive *in situ* sintering. – *Ibid.*, 176–180. doi:10.4028/www.scientific.net/SSP320.176

Kolnes, M., Tarraste, M., Kübarsepp, J., Juhani, K., Viljus, M. Alloying of TiC-FeCr cermets in manganese vapor. – IOP Conf. Series: Material Science and Engineering, 2021, 1140, 012043. doi:10.1088/1757-899X/1140/1/012043

Kolnes, M., Tarraste, M., Kübarsepp, J., Juhani, K., Viljus, M. *In situ* alloying of TiC-FeCr cermets in manganese vapor. – Proceedings of the Estonian Academy of Sciences, 2021, 70 (4), 533–539. doi:10.3176/proc.2021.4.22

Rüütmann, T., Annus, I., Kübarsepp, J., Läänemets, U., Umborg, J. Updated curriculum for engineering pedagogical continuing in-service education. – Hortsch, H., Auer, M. (eds). Proceedings of ICL2021 – 24th International Conference on Interactive Collaborative Learning, 22–24 September, 2021, TU Dresden and HTW Dresden, Germany. Springer, 2021, 379–390.

Rein KÜTTNER

Küttner, R. (toim.), Lavin, J. Terviklik tootmine: tootmise juhtimine ja planeerimine. – Tallinn : Lavin kirjastus, 2021. – 237 lk.

Maris LAAN

Hallast, P., Kibena, L., Punab, M., Arciero, E., Roots, S., Grigorova, M., ... , Laan, M. A common 1.6 mb Y-chromosomal inversion predisposes to subsequent deletions and severe spermatogenic failure in humans. – eLife, 2021, 10, e65420. doi:10.7554/eLife.65420

Hardy, J.J., Wyrwoll, M.J., Mcfadden, W., Malcher, A., Rotte, N., Pollock, N.C., ... , Laan, M., ... , GEMINI Consortium. Variants in GCNA, X-linked germ-cell genome integrity gene, identified in men with primary spermatogenic failure. – Human Genetics, 2021, 140 (8), 1169–1182. doi:10.1007/s00439-021-02287-y

Inno, R., Kikas, T., Lillepea, K., Laan, M. Coordinated expressional landscape of the human placental miRNome and transcriptome. – Frontiers in Cell and Developmental Biology, 2021, 9, 697947. doi:10.3389/fcell.2021.697947

Kasak, L., Laan, M. Monogenic causes of non-obstructive azoospermia: challenges, established knowledge, limitations and perspectives. – Human Genetics, 2021, 140 (1), 135–154. doi:10.1007/s00439-020-02112-y

Salas-Huetos, A., Tüttelmann, F., Wyrwoll, M.J., Kliesch, S., Lopes, A.M., Gonçalves, J., ... , GEMINI Consortium (*incl.* Laan, M.), ... , Aston, K.I. Disruption of human meiotic telomere complex genes TERB1, TERB2 and MAJIN in men with non-obstructive azoospermia. – *Ibid.*, 217–227. doi:10.1007/s00439-020-02236-1

Kasak, L., Rull, K., Yang, T., Roden, D.M., Laan, M. Recurrent pregnancy loss and concealed long-QT syndrome. – Journal of the American Heart Association, 2021, 10, e021236. doi:10.1161/JAHA.121.021236

Kikas, T., Laan, M., Kasak, L. Current knowledge on genetic variants shaping placental transcriptome and their link to gestational and postnatal health. – Placenta, 2021, 116, 2–11. doi: 10.1016/j.placenta.2021.02.009

Laan, M., Kasak, L., Punab, M. Translational aspects of novel findings in genetics of male infertility-status quo 2021. – British Medical Bulletin, 2021, 140 (1), 5–22. doi:10.1093/bmb/lbab025

Laan, M., Kasak, L., Timinskas, K., Grigorova, M., Venclovas, C., Renaux, A., Lenaerts, T., Punab, M. NR5A1 c.991-1G > C splice-site variant causes familial 46,XY partial gonadal dysgenesis with incomplete penetrance. – Clinical Endocrinology, 2021, 94 (4), 656–666. doi:10.1111/cen.14381.

* * *

Dzaparaidze, G., Anion, E., Laan, M., Minajeva, A. FANCMi immunohistokeemiline ekspressioon väheneb eesnäärmevähi stroomas sõltuvalt diferentseerumisastme rühmast. – Eesti Arst, 2021, 100 (5), 324.

Kolk, A., Leis, K., Laan, M., Parmas, K.-A. Gilles de la Tourette'i sündroomi perekondlik haigusjuht. – Eesti Arst, 2021, 100 (2), 110–113.

Ratnik, K., Rull, K., Hanson, E., Kisand, K., Laan, M. Preeklampsia riski ennustustesti ja -mudeli väljatöötamine. – Eesti Arst, 100 (3), 173–173.

Valter LANG

Ehrlich, F., Rannamäe, E., Laneman, M., Tõrv, M., Lang, V., Oras, E., Lõugas, L. In search of Estonia's earliest chicken. – Estonian Journal of Archaeology, 2021, 25 (2), 160–181.

Sperling, U., Karlsen, H.-J., Lang, V., Lõugas, L., Lau, R. Ausgrabungen in Asva im Jahr 2020 – auf den Spuren des Bronzegießerplatzes. – Archaeological Fieldwork in Estonia, 2021, 2020, 53–64.

Margus LOPP

Ivanova, L., Rausalu, K., Ošeka, M., Kananovich, D.G., Žusinaite, E., Tammiku-Taul, J., Lopp, M., ... , Karelson, M. Novel analogues of the Chikungunya virus protease inhibitor: Molecular design, synthesis, and diological dvaluation. – ACS Omega, 2021, 6 (16), 10884–10896. doi:10.1021/acsomega.1c00625

Kaldas, K., Niidu, A., Preegel, G., Uustalu, J.M., Muldma, K., Lopp, M. Aspects of kerogen oxidative dissolution in subcritical water using oxygen from air. – Oil Shale, 2021, 38 (3), 199–214. doi:10.3176/oil.2021.3.02

Kananovich, D., Elek, G.Z., Lopp, M., Borovkov, V. Aerobic oxidations in asymmetric synthesis: Catalytic strategies and recent developments. – Frontiers in Chemistry, 2021, 9. doi: 10.3389/fchem.2021.614944

Kooli, A., Shalima, T., Lopušanskaja, E., Paju, A., Lopp, M. Selective C-alkylation of substituted naphthols under non-aqueous conditions. – Tetrahedron, 2021, 95, 132278. doi:10.1016/j.tet.2021.132278

Köllo, M., Kasari, M., Kasari, V., Pehk, T., Järving, I., Lopp, M., ... , Kanger, T. Designed whole-cell-catalysis-assisted synthesis of 9,11-secosterols. – Beilstein Journal of Organic Chemistry, 2021, 17, 581–588. doi:10.3762/bjoc.17.52

Lopušanskaja, E., Kooli, A., Paju, A., Järving, I., Lopp, M. Towards ortho-selective electrophilic substitution/addition to phenolates in anhydrous solvents. – Tetrahedron, 2021, 83, 131935. doi:10.1016/j.tet.2021.131935

Puthiya Veetil, S.K., Rebane, K., Yörük, C.R., Lopp, M., Trikkel, A., Hitch, M. Aqueous mineral carbonation of oil shale mine waste (limestone): A feasibility study to develop a CO₂ capture sorbent. – Energy, 2021, 221, 119895. doi:10.1016/j.energy.2021.119895

Zubrytski, D.M., Elek, G.Z., Lopp, M., Kananovich, D.G. Generation of mixed anhydrides via oxidative fragmentation of tertiary cyclopropanols with phenyliodine(III) dDicarboxylates. – Molecules, 2021, 26 (1), 140. doi:10.3390/molecules26010140

* * *

Lopp, M., Kaldas, K., Preegel, G., Muldma, K., Niidu, A. Põlevkivi kerogeeni oksüdeeriva lahustamise meetod. Est. Pat. Appl., 2021, EE 2019000020 A 20210215.

Enn LUST

Adamson, A., Korjus, O., Väli, R., Aruväli, J., Jänes, A., Lust, E. Operando XRD study on the effect of boron doping on the failure mechanisms of Na-, Ni- and Mn-based positive electrodes in sodium-ion batteries. – The Electrochemical Society, 2021, 104 (1), 99–106. doi:10.1149/10401.0099ecst

Cepitis, R., Kongi, N., Grozovski, V., Ivanistsev, V., Lust, E. Multifunctional electrocatalysis on single-site metal catalysts: A computational perspective. – Catalysts, 2021, 11 (10), 1165. doi:10.3390/catal11101165

Ers, H., Nerut, J., Lust, E., Pikma, P. Long-term stability of Cd(0001) single crystal | ionic liquid interface – The effect of I⁻ addition. – Journal of Electroanalytical Chemistry, 2021, 903, 115826. doi:10.1016/j.jelechem.2021.115826

Härmas, R., Palm, R., Kurig, H., Puusepp, L., Pfaff, T., Romann, T., …, Lust, E. Carbide-derived carbons: WAXS and Raman spectra for detailed structural analysis. – Journal of Carbon Research, 2021, 7 (1), 29. doi:10.3390/c7010029

Jäger, R., Teppor, P., Paalo, M., Härmas, M., Adamson, A., Volobujeva, O., …, Lust, E. Synthesis and characterization of cobalt and nitrogen co-doped peat-derived carbon catalysts for oxygen reduction in acidic media. – Catalysts, 2021, 11 (6), 715. doi:10.3390/catal11060715

Jürjo, S., Siinor, L., Siimenson, C., Paiste, P., Lust, E. Two-step solvent extraction of radioactive elements and rare earths from Estonian phosphorite ore using Nitrated Aliquat 336 and Bis(2-ethylhexyl) Phosphate. – Minerals, 2021, 11 (4), 388. doi:10.3390/min11040388

Kivi, I., Nurk, G., Korjus, O., Möller, P., Aruväli, J., Lust, K., Lust, E. Comparative study of the crystallographic expansion of GSC and LSC porous electrodes. – Fuel Cells, 2021, 21 (3), 290–300. doi:10.1002/fuce.202100019

Koppel, M., Palm, R., Härmas, R., Russina, M., Matsubara, N., Måansson, M., …, Lust, E. *In situ* observation of pressure modulated reversible structural changes in the graphitic domains of carbide-derived carbons. – Carbon, 2021, 174, 190–200. doi:10.1016/j.carbon.2020.12.025

Korjus, O., Möller, P., Kooser, K., Käämbre, T., Volobujeva, O., Nerut, J., …, Lust, E., Nurk, G. Influence of Ni concentration on electrochemical and crystallographic properties of La_{0.25}Sr_{0.25}Ca_{0.4}Ti_{1-x}Ni_xO₃– solid oxide fuel cell anode. – Journal of Power Sources, 2021, 494, 229739. doi:10.1016/j.jpowsour.2021.229739

Kruusma, J., Tõnisoo, A., Pärna, R., Thomberg, T., Kook, M., Romann, T., ... , Lust, E. The electrochemical behaviour of quaternary amine-based room-temperature ionic liquid N4111(TFSI). – Catalysts, 2021, 11 (11), 1315. doi:10.3390/catal11111315

Kruusma, J., Tõnisoo, A., Pärna, R., Thomberg, T., Kook, M., Romann, T., ... , Lust, E. The electrochemical behaviour of protic quaternary amine based room-temperature ionic liquid N2210(OTf) at negatively and positively polarized micro-mesoporous carbon electrode investigated by *in situ* X-ray photoelectron spectroscopy, *in situ* mass-spectroscopy, cyclic voltammetry and electrochemical impedance spectroscopy methods. – Journal of Electroanalytical Chemistry, 2021, 897, 115561. doi:10.1016/j.jelechem.2021.115561

Kukk, F., Pylypko, S., Lust, E., Nurk, G. Influence of active layer thickness of reversible solid oxide cells on the electrochemical performance of water electrolysis. – ECS Transactions, 2021, 103 (1), 511–518. doi:10.1149/10301.0511ecst

Heinsaar, A., Kivi, I., Möller, P., Kooser, K., Käämbre, T., Aruväli, J., Lust, E., Nurk, G. Influence of the Ti content on the electrochemical performance and surface properties of (La_{0.6}Sr_{0.4})_{0.99}Co_{1-x}Ti_xO_{3-δ} oxygen electrode. – *Ibid.*, 1433–1444. doi:10.1149/10301.1433ecst

Paydar, S., Korjus, O., Maide, M., Kivi, I., Lust, E., Nurk, G. Electrical properties of novel La_{0.2}Sr_{0.7-x}CaxTi_{0.95}Fe_{0.05}O_{3-d} based fuel electrode for solid oxide cell. – *Ibid.*, 1971–1979. doi:10.1149/10301.1971ecst

Maide, M., Möller, P., Aruväli, J., Lust, E., Nurk, G. Physical and electrochemical characterization of La_{0.25}Sr_{0.25}Ca_{0.40}Ti_{0.95}Ni_{0.05-x}Sn_xO_{3-??}(x=0...0.05) reversible solid oxide cell fuel electrode. – *Ibid.*, 2099–2109. doi:10.1149/10301.2099ecst

Palm, R., Härmä, R., Härk, E., Kent, B., Kurig, H., Koppel, M., ... , Lust, E. Study of the structural curvature in Mo₂C derived carbons with contrast matched small-angle neutron scattering. – Carbon, 2021, 171, 695–703. doi:10.1016/j.carbon.2020.09.070

Romann, T., Eskusson, J., Thomberg, T., Lust, E., Jänes A. Bis(trifluoromethanesulfonyl)imide metallic salts based electrolytes for electrochemical capacitor application: Theoretical vs experimental performance. – Journal of the Electrochemical Society, 2021, 168 (7), 070528. doi:10.1149/1945-7111/ac11a2

Väärtnõu, M., Lust, E. Adsorption of iodide ions at the Bi | vinylene carbonate interface. – Journal of Solid State Electrochemistry, 2021, 25, 2861–2868. doi:10.1007/s10008-021-05008-7

Eskusson, J., Thomberg, T., Romann, T., Lust, K., Lust, E., Jänes, A. Zn(ClO₄)₂ aqueous solution-based Zn thin foil|carbon cloth two-electrode single-cell characteristics. – *Ibid.*, 25, 2869–2880. doi:10.1007/s10008-021-05028-3

Andres METSPALU

Andlauer, T.F.M., Guzman-Parra, J., Streit, F., Bipolar Disorder Working Group of the Psychiatric Genomics Consortium, Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium (*incl.* Metspalu, A.), ... , Rieschel, M. Bipolar multiplex

families have an increased burden of common risk variants for psychiatric disorders. – Molecular Psychiatry, 2021, 26, 1286–1298. doi:10.1038/s41380-019-0558-2

Blokland, G. A. M., Grove, J., Chen, C.-Y., Cotsapas, C., Tobet, S., Handa, R., … , Metspalu, A., … , Goldstein, J.M. Sex-dependent shared and nonshared genetic architecture across mood and psychotic disorders. – Biological Psychiatry, 2022, 91 (1), 102–117. doi:10.1016/j.biopsych.2021.02.972

Chen, J., Spracklen, C.N., Marenne, G., Varshney, A., Corbin, L.J., Luan, J., … , Metspalu, A., … , The Meta-Analysis of Glucose and Insulin-related Traits Consortium (MAGIC). The trans-ancestral genomic architecture of glycemic traits. – Nature Genetics, 2021, 53 (6), 840–860. doi:10.1038/s41588-021-00852-9

Cuellar-Partida, G., Tung, J.Y., Eriksson, N., Albrecht, E., Aliev, F., Andreassen, O.A., … , Metspalu, A., … , Medland, S.E. Genome-wide association study identifies 48 common genetic variants associated with handedness. – Nature Human Behaviour, 2021, 5, 59–70. doi:10.1038/s41562-020-00956-y

Fridman, H., Yntema, H.G., Mägi, R., Andreson, R., Metspalu, A., Mezzavila, M., … , Brunner, H.G. The landscape of autosomal-recessive pathogenic variants in European populations reveals phenotype-specific effects. – American Journal of Human Genetics, 2021, 108 (4), 608–619. doi:10.1016/j.ajhg.2021.03.004

Ghini, V., Abuja, P.M., Polasek, O., Kozera, L., Laiho, P., Anton, G., … , Metspalu, A., … , Turano, P. Metabolomic fingerprints in large population cohorts: Impact of preanalytical heterogeneity. – Clinical Chemistry, 2021, 67 (8), 1153–1155. doi:10.1093/clinchem/hvab092

Giannakopoulou, O., Lin, K., Meng, X., Su, M.-H., Kuo, P.-H., Peterson, R.E., … , Milani, L., Mihailov, E., Metspalu, A.. The genetic architecture of depression in individuals of East Asian ancestry a genome-wide association study. – JAMA Psychiatry. 2021, 78 (11), 1258–1269. doi:10.1001/jamapsychiatry.2021.2099

Hemani, G., Powell, J.E., Wang, H., Shakhbazov, K., Westra, H.-J., Esko, T., … , Metspalu, A., Visscher, P.M. Phantom epistasis between unlinked loci. – Nature, 2021, 596 (7871), E1–U5. doi:10.1038/s41586-021-03765-z

Lagou, V., Mägi, R., Hottenga, J.-J., Grallert, H., Perry, J.R.B., Bouatia-Naji, N., … , Metspalu, A., … , Meta-Analyses of Glucose and Insulin-related traits Consortium (MAGIC). Sex-dimorphic genetic effects and novel loci for fasting glucose and insulin variability. – Nature Communications, 2021, 12 (1), 24. doi:10.1038/s41467-020-19366-9

Laisk, T., Lepamets, M., Koel, M., Abner, E., Estonian Biobank Research Team, Mägi, R. Genome-wide association study identifies five risk loci for pernicious anemia. – *Ibid.*, 3761. doi:10.1038/s41467-021-24051-6

Porcu, E., Sadler, M.C., Lepik, K., Auwerks, C., Wood, A.R., Weihs, A., … , Metspalu, A., … , Kutalik, Z. Differentially expressed genes reflect disease-induced rather than disease-causing changes in the transcriptome. – *Ibid.*, 5647. doi:10.1038/s41467-021-25805-y

- Leitsalu, L., Palover, M., Sikka, T.T., Reigo, A., Kals, M., Pärn, K., ... , Metspalu, A., ... , Tõnisson, N. Genotype-first approach to the detection of hereditary breast and ovarian cancer risk, and effects of risk disclosure to biobank participants. – European Journal of Human Genetics, 2021, 29, 471–481. doi:10.1038/s41431-020-00760-2
- Luo, Y., Kanai, M., Choi, W., Li, X., Sakaue, S., Yamamoto, K., ... , Metspalu, A., ... , Raychaudhuri, S. A high-resolution HLA reference panel capturing global population diversity enables multi-ancestry fine-mapping in HIV host response. – Nature Genetics, 2021, 53 (10), 1504–1516. doi:10.1038/s41588-021-00935-7
- Min, J.L., Hemani, G., Hannon, E., Dekkers, K.F., Castillo-Fernandez, J., Luijk, R., ... , Metspalu, A., ... , Relton, C.L. Genomic and phenotypic insights from an atlas of genetic effects on DNA methylation. – Nature Genetics, 2021, 53 (9), 1311–1321. doi:10.1038/s41588-021-00923-x
- Munn-Chernoff, M.A., Johnson, E.C., Chou, Y.-L., Coleman, J.R.I., Thornton, L.M., Walters, R.K., ... , Metspalu, A., ... , Agrawal, A. Shared genetic risk between eating disorder- and substance-use-related phenotypes: Evidence from genome-wide association studies. – Addiction Biology, 2021, 26 (1), e12880. doi:10.1111/adb.12880
- NCD Risk Factor Collaboration (NCD-RisC) (*incl.* Metspalu, A.). Heterogeneous contributions of change in population distribution of body mass index to change in obesity and underweight. – eLife, 2021, 10, e60060. doi:10.7554/eLife.60060
- NCD Risk Factor Collaboration (NCD-RisC) (*incl.* Metspalu, A.) Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. – The Lancet, 2021, 398 (10304), 957–980. doi:10.1016/S0140-6736(21)01330-1
- Ni, G., Zeng, J., Revez, J.A., Wang, Y., Zheng, Z., Ge, T., ... , Metspalu, A., ... , Wray, N.R. A comparison of ten polygenic score methods for psychiatric disorders applied across multiple cohorts. – Biological Psychiatry, 2021, 90 (9), 611–620. doi:10.1016/j.biopsych.2021.04.018
- Nikopensius, T., Niibo, P., Haller, T., Jagomägi, T., Voog-Oras, Ü., Tõnisson, N., Metspalu, A., ... , Pruunsild, C. Association analysis of juvenile idiopathic arthritis genetic susceptibility factors in Estonian patients. – Clinical Rheumatology, 2021, 40 (10), 4157–4165. doi:10.1007/s10067-021-05756-x
- Peterson, R.E., Bigdeli, T.B., Ripke, S., Bacanu, S.A., Gejman, P.V., Levinson, D.F., ... , Schizophrenia Working Group of the Psychiatric Genomics Consortium (*incl.* Metspalu, A.), Fanous, A.H. Genome-wide analyses of smoking behaviors in schizophrenia: Findings from the Psychiatric Genomics Consortium. – Journal of Psychiatric Research, 2021, 137, 215–224. doi:10.1016/j.jpsychires.2021.02.027
- Prins, B.P., Leitsalu, L., Pärna, K., Fischer, K., Metspalu, A., Haller, T., Snieder, H. Advances in genomic discovery and implications for personalized prevention and medicine: Estonia as example. – Journal of Personalized Medicine, 2021, 11 (5), 358. doi:10.3390/jpm11050358

Ruth, K.S., Day, F.R., Hussain, J., Martinez-Marchal, M., Aiken, C.E., Azad, A., ... , Metspalu, A., ... , Perry, J.R.B. Genetic insights into biological mechanisms governing human ovarian ageing. – *Nature*, 2021, 596 (7872), 393–397. doi:10.1038/s41586-021-03779-7

Taba, N., Valge, H.-K., Metspalu, A., Esko, T., Wilson, J.F., Fischer, K., Pirastu, N. Mendelian randomization identifies the potential causal impact of dietary patterns on circulating blood metabolites. – *Frontiers in Genetics*, 2021, 12, 738265. doi:10.3389/fgene.2021.738265

Wang, H., Noordam, R., Cade, B.E., Schwander, K., Winkler, T.W., Lee, J., ... , Metspalu, A., ... , van Heemst, D. Multi-ancestry genome-wide gene-sleep interactions identify novel loci for blood pressure. – *Molecular Psychiatry*, 2021, 26, 6293–6304. doi:10.1038/s41380-021-01087-0

Zeng, L., Moser, S., Mirza-Schreiber, N., Lamina, C., Coasson, S., Nelson, C.P., ... , Metspalu, A., ... , Schunkert, H. Cis-epistasis at the LPA locus and risk of cardiovascular diseases. – *Cardiovascular Research*, 2021, 1–15. doi:10.1093/cvr/cvab136

Lauri MÄLKSOO

Mälksoo, L. Neteiseta aneksija ir valstybes testinumas: Baltijos šaliu prijungimas prie SSRS / Illegal Annexation and State Continuity: The Case of the Incorporation of the Baltic States by the USSR – Lietuvos gyventojų genocido ir rezistencijos tyrimo centras, 2021. – 334 p. – (Leedu k.)

* * *

Mälksoo, L. Post-Soviet Eurasia, uti possidetis and the clash between universal and Russian-led regional understandings of international law. – *New York University Journal of International Law and Politics*, 2021, 53 (3), 787–822.

Mälksoo, L. Russia's 2020 constitutional amendments and international law. – *American Journal of International Law*, 2021, 115 (1), 78–93.

Mälksoo, L. The Russian concept of international law as imperial legacy. – Hilbold, P. (ed). European International Law Traditions. Springer, Heidelberg, 2021, 261–277.

Mälksoo, L. Versailles' rahulepingust Molotovi-Ribbentropi paktini. – *Akadeemia*, 2021, 12, 2157–2185.

Ülo NIINEMETS

Barreira, L.M.F., Ylisirniö, A., Pullinen, I., Buchholz, A., Li, Z., Lipp, H., ... , Niinemets, Ü., ... , Schobesberger, S. The importance of sesquiterpene oxidation products for secondary organic aerosol formation in a springtime hemiboreal forest. – *Atmospheric Chemistry and Physics*, 2021, 21 (15), 11781–11800. doi:10.5194/acp-21-11781-2021

Casanellas-Abella, J., Frey, D., Müller, S., Aleixo, C., Alós Ortí, M., Deguines, N., ... , Niinemets, Ü., ... , Moretti, M. A dataset of the flowering plants (Angiospermae) in urban green areas in five European cities. – *Data in Brief*, 2021, 37, 107243. doi:10.1016/j.dib.2021.107243

Chen, J., Liu, Q., Yu, L., Korpelainen, H., Niinemets, Ü., Li, C. Elevated temperature and CO₂ interactively modulate sexual competition and ecophysiological responses of dioecious *Populus cathayana*. – Forest Ecology and Management, 2021, 481, 118747. doi:10.1016/j.foreco.2020.118747

Davison, J., Moora, M., Semchenko, M., Adenan, S.B., Ahmed, T., Akhmetzhanova, A.A., ..., Niinemets, Ü., ..., Öpik, M. Temperature and pH define the realised niche space of arbuscular mycorrhizal fungi. – New Phytologist, 2021, 231, 763–776. doi:10.1111/nph.17240

Elferjani, R., Benomar, L., Momayyezi, M., Tognetti, R., Niinemets, Ü., Soolanayakanahally RYT-R, ..., Lamara, M. A meta-analysis of mesophyll conductance to CO₂ in relation to major abiotic stresses in poplar species. – Journal of Experimental Botany, 2021, 72, 4384–4400. doi:10.1093/jxb/erab127

Ely, K.S., Rogers, A., Agarwal, D.A., Ainsworth, E.A., Albert, L.P., Ali, A., ..., Niinemets, Ü., ..., Yang D. A reporting format for leaf-level gas exchange data and metadata. – Ecological Informatics, 2021, 61, 101232. doi:10.1016/j.ecoinf.2021.101232

Falster, D., Gallagher, R., Wenk, E.H., Wright, I.J., Indarto, D., Andrew, S.C., ..., Niinemets, Ü., ..., Ziemińska, K. AusTraits, a curated plant trait database for the Australian flora. – Scientific Data, 2021, 8, 254. doi:10.1038/s41597-021-01006-6

Fristoe, T.S., Chytry, M., Dawson, W., Essl, F., Heleno, R., Kreft, H., ..., Niinemets, Ü., ..., van Kleunen, M. Dimensions of invasiveness: Links between local abundance, geographic range size, and habitat breadth in Europe's alien and native floras. – Proceedings of the National Academy of Sciences, 2021, 118, e2021173118. doi:10.1073/pnas.2021173118

Guo, X., Shi, P., Niinemets, Ü., Hölscher, D., Wang, R., Liu, M., ..., Niklas, K.J. “Diminishing returns” for leaves of five age-groups of *Phyllostachys edulis* culms. – American Journal of Botany, 2021, 108, 1662–1672.

Huang, L., Niinemets, Ü., Ma, J., Schrader, J., Wang, R., Shi, P. Plant age has a minor effect on non-destructive leaf area calculations in moso bamboo (*Phyllostachys edulis*). – Symmetry, 2021, 13, 369. doi:10.3390/sym13030369

Iñiguez, C., Niinemets, Ü., Mark, K., Galmés, J. Analyzing the causes of method-to-method variability among Rubisco kinetic traits: from the first to the current measurements. – Journal of Experimental Botany, 2021, 72, 7846–7862. doi:10.1093/jxb/erab356

Jiang, Y., Ye, J., Niinemets, Ü. Dose-dependent methyl jasmonate effects on photosynthetic traits and volatile emissions: biphasic kinetics and stomatal regulation. – Plant Signalling & Behavior, 2021, 16, 1917169. doi:10.1080/15592324.2021.1917169

Kelly, R., Healy, K., Anand, M., Baudraz, M.E.A., Bahn, M., Cerabolini, B.E.L., ..., Niinemets, Ü., ..., Buckley, Y.M. Climatic and evolutionary contexts are required to infer plant life history strategies from functional traits at a global scale. – Ecology Letters, 2021, 24, 970–983. doi:10.1111/ele.13704

Laughlin, D.C., Mommer, L., Sabatini, F.M., Bruelheide, H., Kuyper, T.W., McCormack, M.L., ..., Niinemets, Ü., ..., Weigelt, A. Root traits explain plant species distributions along climatic gradients yet challenge the nature of ecological trade-offs. – Nature Ecology & Evolution, 2021, 5, 1123–1134. doi:10.1038/s41559-021-01471-7

Lei, Z.-Y., Wan, H., Wright, I.J., Zhu, X.-G., Niinemets, Ü., Li, Z.-L., ... , Zhang, Y.-L. Enhanced photosynthetic nitrogen use efficiency and increased nitrogen allocation to photosynthetic machinery under cotton domestication. – Photosynthesis Research, 2021, 150, 239–250. doi:10.1007/s11120-021-00872-w

Liao, H., Pal, R.W., Niinemets, Ü., Bahn, M., Cerabolini, B.E.L., Peng, S. Different functional characteristics can explain different dimensions of plant invasion success. – Journal of Ecology, 2021, 109, 1524–1536. doi:10.1111/1365-2745.13575

Liu, B., Zhang, L., Rusalepp, L., Kaurilind, E., Yusuf Sulaiman, H., Püssa, T., Niinemets, Ü. Heat priming improved heat tolerance of photosynthesis, enhanced terpenoid and benzenoid emission and phenolics accumulation in *Achillea millefolium*. – Plant, Cell & Environment, 2021, 44, 2365–2385. doi:10.1111/pce.13830

Ninemets, Ü., Rasulov, B., Talts, E. CO₂-responsiveness of leaf isoprene emission: why do species differ? – *Ibid.*, 3049–3063. doi:10.1093/treephys/tpab064

Mander, Ü., Krasnova, A., Escuer-Gatius, J., Espenberg, M., Schindler, T., Macháčová, K., ... , Niinemets, Ü., ... , Soosaar, K. Forest canopy mitigates soil N₂O emission during hot moments. – npj Climate and Atmospheric Science, 2021, 4, 39. doi:10.1038/s41612-021-00194-7

Ninemets, Ü., Gershenson, J. Vulnerability and responses to bark beetle and associated fungal symbiont attacks in conifers. – Tree Physiology, 2021, 41, 1103–1108. doi:10.1093/treephys/tpab064

Jiang, Y., Ye, J., Veromann-Jürgenson, L.-L., Niinemets, Ü. Gall- and erineum-forming *Eriophyes* mites alter photosynthesis and volatile emissions in infection severity-dependent manner in broad-leaved trees *Alnus glutinosa* and *Tilia cordata*. – *Ibid.*, 1122–1142. doi:10.1093/treephys/tpaa173

Liu, M., Liu, X., Du, X., Korpelainen, H., Niinemets, Ü., Li, C. Anatomical variation of mesophyll conductance due to salt stress in *Populus cathayana* females and males growing under different inorganic nitrogen sources. – *Ibid.*, 1462–1478. doi:10.1093/treephys/tpab017

Okereke, C.N., Liu, B., Kaurilind, E., Niinemets, Ü. Heat stress resistance drives coordination of emissions of suites of volatiles after severe heat stress and during recovery in five tropical crops. – Environmental and Experimental Botany, 2021, 184, 104375. doi:10.1016/j.envexpbot.2021.104375

Pinho, B.X., Tabarelli, M., ter Braak, C.J.F., Wright, S.J., Arroyo-Rodríguez, V., Benchimol, M., ... , Niinemets, Ü., ... , Melo, F.P.L. Functional biogeography of Neotropical moist forests: Trait-climate relationships and assembly patterns of tree communities. – Global Ecology and Biogeography, 2021, 30, 1430–1446. doi:10.1111/geb.13309

Pinho, P., Casanelles-Abella, J., Casanelles, J., Luz, A.C., Kubicka, A.M., Branquinho, C., ... , Niinemets, Ü., Moretti, M. Research agenda on biodiversity and ecosystem functions and services in European cities. – Basic and Applied Ecology, 2021, 53, 124–133. doi:10.1016/J.BAAE.2021.02.014

Popitanu, C., Lupitu, A., Copolovici, L., Bungău, S., Niinemets, Ü., Copolovici, D.M. Induced volatile emissions and, photosynthetic characteristics and pigment content in *Juglans regia* leaves infected with the erineum-forming mite *Aceria erinea*. – Forests, 2021, 12, 920. doi:10.3390/f12070920

Portillo-Estrada, M., Okereke, C.N., Jiang, Y., Talts, E., Kaurilind, E., Niinemets, Ü. Wounding-induced VOC emissions in five tropical agricultural species. – *Molecules*, 2021, 26, 2602. doi:10.3390/molecules26092602

Kask, K., Kaurilind, E., Talts, E., Kännaste, A., Niinemets, Ü. Combined acute ozone and water stress alters the quantitative relationships between O₃ uptake, photosynthetic characteristics and volatile emissions in *Brassica nigra*. – *Ibid.*, 3114. doi:10.3390/molecules26113114

Opriş, O., Copaciu, F., Soran, M.L., Niinemets, Ü., Copolovici, L. Content of carotenoids, violaxanthin and neoxanthin in leaves of *Triticum aestivum* exposed to persistent environmental pollutants. – *Ibid.*, 4448. doi:10.3390/molecules26154448

Prigioniero, A., Zuzolo, D., Niinemets, Ü., Guarino, C. Nature-based solutions as tools for air phytoremediation: A review of the current knowledge and gaps. – *Environmental Pollution*, 2021, 277, 116817. doi:10.1016/j.envpol.2021.116817

Runno-Paurson, E., Lääriste, P., Eremeev, V., Edesi, L., Metspalu, L., Kännaste, A., Niinemets, Ü. Powdery mildew (*Erysiphe cruciferarum*) evaluation on oilseed rape and alternative cruciferous oilseed crops in northern Baltic region in unusually warm growing seasons. – *Acta Agriculturae Scandinavica, Section B, Soil and Plant Sciences*, 2021, 71, 443–452. doi:10.1080/09064710.2021.1914714

Runno-Paurson, E., Lääriste, P., Nassar, H., Hansen, M., Eremeev, V., Metspalu, L., ..., Niinemets, Ü. Alternaria black spot (*Alternaria brassicae*) infection severity on cruciferous oilseed crops. – *Applied Sciences*, 2021, 11, 8507. doi:10.3390/app11188507

Shi, P.-J., Lia, Y.-R., Niinemets, Ü., Olson, E., Schrader, J. Influence of leaf shape on the scaling of leaf surface area and length in bamboo plants. – *Trees: Structure and Function*, 2021, 35, 709–715. doi:10.1007/s00468-020-02058-8

Shi, P., Jiao, Y., Diggle, P.J., Turner, R., Wang, R., Niinemets, Ü. Spatial distribution characteristics of stomata at the areole level in *Michelia cavaleriei* var. *platypetala* (Magnoliaceae). – *Annals of Botany*, 2021, 128, 875–886. doi:10.1093/aob/mcab106

Sporbert, M., Welk, E., Seidler, G., Jandt, U., Aćić, S., Biurrun, I., ..., Niinemets, Ü., ..., Bruelheide, H. Different sets of traits explain abundance and distribution patterns of European plants at different spatial scales. – *Journal of Vegetation Science*, 2021, 32, e13016. doi:10.1111/jvs.13016

Sulaiman, H.Y., Liu, B., Kaurilind, E., Niinemets, Ü. Phloem-feeding insect infestation antagonizes volatile organic compound emissions and enhances heat stress recovery of photosynthesis in *Origanum vulgare*. – *Environmental and Experimental Botany*, 2021, 189, 104551. doi:10.1016/j.envexpbot.2021.104551

Taipale, D., Kerminen, V.-M., Ehn, M., Kulmala, M., Niinemets, Ü. Modelling the influence of biotic plant stress on atmospheric aerosol particle processes throughout a growing season. – *Atmospheric Chemistry and Physics*, 2021, 21, 17389–17431. doi:10.5194/acp-21-17389-2021

Tamme, R., Pärtel, M., Kõljalgi, U., Laanisto, L., Liira, J., Mander, Ü., ..., Niinemets, Ü., ..., Zobel, M. Global macroecology of nitrogen-fixing plants. – *Global Ecology & Biogeography*, 2021, 30, 514–526. doi:10.1111/geb.13236

Xing, K., Niinemets, Ü., Rengel, Z., Onoda, Y., Xia, J., Chen, H.Y.H., … , Li, H. Global patterns of leaf construction traits and their covariation along climate and soil environmental gradients. – *The New Phytologist*, 2021, 232, 1648–1660. doi:10.1111/nph.17686

Xing, K., Zhao, M., Niinemets, Ü., Niu, S., Tian, J., Jiang, Y., … , Ma, Z. Relationships between leaf carbon and macronutrients across woody species and forest ecosystems highlight how carbon is allocated to leaf structural function. – *Frontiers in Plant Science*, 2021, 12, 674932. doi:10.3389/fpls.2021.674932

Karl PAJUSALU

Balodis, U., Pajusalu, K. (eds). *Uurimusi lõunaeesti keelesaartest / Studies on the South Estonian language islands* (Leivu, Lutsi, Kraasna). – Tartu : Tartu Ülikooli Kirjastus, 2021. – 390 lk. – (ESUKA / JEFUL; 12 (2)).

Ilves, Kr., Laande, A., Todesk, T., Pajusalu, K. *Mulgi veebisõnaraamat I*. – Tallinn : Eesti Keele Instituut, 2021. – (<http://www.eki.ee/dict/mulgisuur/>)

* * *

Balodis, U., Pajusalu, K. *Introductory survey of the South Estonian language islands*. – ESUKA / JEFUL, 2021, 12, 7–31.

Norvik, M., Balodis, U., Ernštreits, V., Kļava, G., Metslang, H., Pajusalu, K., Saar, E. *The South Estonian language islands in the context of the Central Baltic area*. – *Ibid.*, 33–72.

Pajusalu, K. *Kaksteist lõunapoolseimat läänemeresoome keelt*. – Tartu Ülikooli Lõuna-Eesti keele- ja kultuuruuringu keskuse aastaraamat XIX–XX. Tartu Ülikooli Kirjastus, Tartu, 2021, 139–151.

Pajusalu, K. *Setojen kieli*. – Inkerikot, setot ja vatjalaiset. Kansankulttuuri, kieli ja uskomusperinteet. Suomalaisen Kirjallisuuden Seura, Helsinki, 2021, 280–292.

* * *

Hagu, P., Pajusalu, K. *Seto keele teejuht*. Seto Instituut, Värska, 2021. – 80 lk.

Pajusalu, K. *Emakeele Seltsi juhtimine*. – Emakeele Selts 1920–2020. Emakeele Selts, Tallinn, 2021, 302–316.

Pajusalu, K., Valge, J. *Emakeele Selts ja Teaduste Akadeemia*. – *Ibid.*, 302–316.

Martti RAIDAL

Anselmi, D., Kannike, K., Marzo, C., Marzola, L., Melis, A., Müürsepp, K., Piva, M., Raidal, M. Fakedoublet solution to the muon anomalous magnetic moment. – *Physical Review*, 2021, D104 (3), 035009. doi:10.1103/PhysRevD.104.035009

Anselmi, D., Kannike, K., Marzo, C., Marzola, L., Melis, A., Müürsepp, K., Piva, M., Raidal, M. Phenomenology of a fake Inert Doublet Model. – *Journal of High Energy Physics*, 2021, 10, 132. doi:10.1007/JHEP10(2021)132

Criado, J.C., Djouadi, A., Koivunen, N., Müürsepp, K., Raidal, M., Veermäe, H. An effective fieldtheory of the Delta-resonance. – [arXiv:2106.09031 [hep-ph]].

Criado, J.C., Djouadi, A., Koivunen, N., Müürsepp, K., Raidal, M., Veermäe, H. Confronting spin-3/2 and other new fermions with the muon g-2 measurement. – Physics Letters, 2021, B820, 136491. doi:10.1016/j.physletb.2021.136491

Criado, J.C., Djouadi, A., Koivunen, N., Raidal, M., Veermäe, H. Higher-spin particles at high-energy colliders. – Journal of High Energy Physics, 2021, 05, 254. doi:10.1007/JHEP05(2021)254

Djouadi, A., Ouyang, R., Raidal, M. Yukawa coupling unification in non-supersymmetric SO(10)models with an intermediate scale. – [arXiv:2106.15822 [hep-ph]]

Hütsi, G., Koivisto, T., Raidal, M., Vaskonen, V., Veermäe, H. Cosmological black holes are notdescribed by the Thakurta metric: LIGO-Virgo bounds on PBHs remain unchanged. – European Physical Journa, 2021, C81 (11), 999. doi:10.1140/epjc/s10052-021-09803-4

Hütsi, G., Koivisto, T., Raidal, M., Vaskonen, V., Veermäe, H. Reply to "Comment on: Cosmologicalblack holes are not described by the Thakurta metric. – [arXiv:2106.02007 [astro-ph.CO]].

Kannike, K., Koivunen, N., Raidal, M. Principle of multiple point criticality in multi-scalar dark matter models. – Nuclear Physics, 2021, B968, 115441. doi:10.1016/j.nuclphysb.2021.115441

Kannike, K., Marzola, L., Raidal, M., Strumia, A. Light Higgs boson from multi-phase criticality indynamical symmetry breaking. – Physics Letters, 2021, B816, 136241. doi:10.1016/j.physletb.2021.136241

Karam, A., Markkanen, T., Marzola, L., Nurmi, S., Raidal, M., Rajantie, A. Higgs-like spectator fieldas the origin of structure. – European Physical Journal, 2021, C81 (7), 620. doi:10.1140/epjc/s10052-021-09417-w

Karam, A., Raidal, M., Tomberg, E. Gravitational dark matter production in Palatini preheating. – Journal of Cosmology and Astroparticle Physics, 2021, 03, 064. doi:10.1088/1475-7516/2021/03/064

Hütsi, G., Raidal, M., Vaskonen, V., Veermäe, H. Two populations of LIGO-Virgo black holes. – *Ibid.*, 068. doi:10.1088/1475-7516/2021/03/068

Maeso, D.N., Marzola, L., Raidal, M., Vaskonen, V., Veermäe, H. Primordial black holes fromspectator field bubbles. – [arXiv:2112.01505 [astro-ph.CO]]

Tiina RANDMA-LIIV

Randma-Liiv, T. Organizing e-participation: Challenges stemming from the multiplicity of actors. – Public Administration, 2021. doi:10.1111/padm.12788

* * *

Randma-Liiv, T., Guezennec, C., Sørsdal, L.M., Poltorak, K. How to design digital tools which involve citizens. – <https://apolitical.co/solution-articles/en/how-to-design-digital-tools-which-involve-citizens>

Anu REALO

Ausmees, L., Realo, A., Allik, J. Episodic memory reliving and personality: Do good “Time Travelers” have distinctive personality profiles? – Journal of Individual Differences, 2021, Advance online publication, doi:10.1027/1614-0001/a000353

Ausmees, L., Talts, M., Allik, J., Vainik, U., Sikka, T.T., Nikopensius, T., Esko, T., Realo, A. Taking risks to feel excitement: Detailed personality profile and genetic associations. – European Journal of Personality, Advance online publication, doi:10.1177/08902070211019242

Baranski, E., Gardiner, G., Lee, D., Members of the International Situations Project, Funder, D. Who in the world is trying to change their personality traits? Volitional personality change among college students in 56 countries. – Journal of Personality and Social Psychology, 2021, 121, 1140–1156. doi:10.1037/pspp0000389

Beilmann, M., Lilleoja, L., Realo, A. Learning to trust: Trends in generalized social trust in the three Baltic countries from 1990 to 2018. – Almakaeva, A., Moreno, A., Wilkes, R. (eds). Social Capital and Subjective Well-Being: Insights from Cross-Cultural Studies. Springer, Cham, Switzerland, 2021, 19–43. doi:10.1007/978-3-030-75813-4

Brauer, K., Proyer, R.T., Greiff, S., Brown, A., Gander, F., Münscher, J.-C., Realo, A., … , Wagner, L. Planning a career in psychological assessment. – European Journal of Psychological Assessment, 2021, 37, 4, 261–265. doi:10.1027/1015-5759/a000666

Lenneis, A., Vainik, U., Teder-Laving, M., Ausmees, L., Lemola, S., Allik, J., Realo, A. Personality traits relate to chronotype at both the phenotypic and genetic level. – Journal of Personality, 2021, 89, 1206–1222. doi:10.1111/jopy.12645

Lemola, S., Gkiouleka, A., Read, B., Realo, A., Walasek, L., Tang, N., Elliott, M.T. Can a ‘Rewards-for-exercise app’ increase physical activity, subjective well-being and sleep quality? An open-label single-arm trial among University staff with low to moderate physical activity levels. – BMC Public Health, 2021, 21, 782. doi:10.1186/s12889-021-10794-w

Jaan ROSS

Kala, V., Ross, J. Õpimustritest muusikateose omadamisel klaveri algõppes. – Mäetagused, 2021, 81, 121–150.

Ross, J. Eesti Kultuurkapital, mõttekirjanduse tõlge. Vastavad 2020. aasta nominendid. – Tõlkija Hääl. Eesti Kirjanike Liidu tõlkijate sektsiooni aastaraamat IX. Tallinn, 2021, 226–229.

Ross, J. Tallinna reaalidest Andrei Ivanovi jutustuses "Tuhk". – Vikerkaar, 2021, 36 (12), 59–63.

Hando RUNNEL

Runnel, H. Loomalood : [luuletused]. – Tartu : Ilmamaa, 2021. – 105 lk.

Runnel, H. (koost). Mall Jürma. Naine raamatute keskel. – Tartu : Ilmamaa, 2021. – 383 lk. – (Eesti mõttelugu; 156).

Runnel, H. (koost). Karl August Hindrey. Minu sajand. – Tartu : Ilmamaa, 2021. – 157 lk. – (Eesti mõttelugu; 157).

Runnel, H. (koost). Rudolf Jalakas. Töö, turg ja tulu : majandusvaatlusi. – Tartu : Ilmamaa, 2021. – 359 lk. – (Eesti mõttelugu; 158).

Runnel, H. (koost). Henrik Visnapuu. Mõni nendest, mu kaasaegsetest. – Tartu : Ilmamaa, 2021. – 510 lk.

Runnel, H. (koost). Henrik Visnapuu. Noorusluulet. – Tartu : Ilmamaa, 2021. – 271 lk.

Peeter SAARI

Besieris, I., Saari, P., Shaarawi, A.M. Modern applications of the Bateman-Whittaker theory. – Progress in Electromagnetics Research M, 2021, 102, 171–180.
doi:10.2528/PIERM21040802

Saari, P., Besieris, I. Backward energy flow in simple four-wave electromagnetic fields. – European Journal of Physics, 2021, 42 (5), 055301–13. doi:10.1088/1361-6404/ac0106

Trebino, R., Jafari, R., Piksam, P., Bowlan, P., Valtna-Lukner, H., Saari, P., … , Steinmeyer, G. The measurement of ultrashort laser pulses. – Guo, C., Singh, S.C. (eds). Handbook of Laser Technology and Applications: Lasers: Principles and Operations (2nd ed). CRC Press, New York, 2021, 49.

Mart SAARMA

Albert, K., Raymundo, D.P., Panhelainen, A., Eesmaa, A., Shvachiy, L., Araújo, G.R., … , Saarma, M., … , Airavaara, M. Cerebral dopamine neurotrophic factor reduces α -synuclein aggregation and propagation and alleviates behavioral alterations in vivo. – Molecular Therapy, 2021, S1525-0016(21)00249-5. doi:10.1016/j.ymthe.2021.04.035

Bondarenko, O., Saarma, M. Neurotrophic factors in Parkinson's disease: Clinical trials, open challenges and nanoparticle-mediated delivery to the brain. – *Frontiers in Cellular Neuroscience*, 2021, 15, 682597. doi:10.3389/fncel.2021.682597

Casarotto, P.C., Girych, M., Fred, S.M., Kovaleva, V., Moliner, R., Enkavi, G., ... , Saarma, M., ... , Castrén, E. Antidepressant drugs act by directly binding to TRKB neurotrophin receptors. – *Cell*, 2021, S0092-8674(21)00077-5. doi:10.1016/j.cell.2021.01.034

Eesmaa, A., Yu, L.-Y., Göös, H., Nõges, K., Kovaleva, V., Hellman, M., ... , Saarma, M. The cytoprotective protein MANF promotes neuronal survival independently from its role as a GRP78 cofactor. – *The Journal of Biological Chemistry*, 2021, 100295. doi:10.1016/j.jbc.2021.100295

Ikaheimo, K., Herranen, A., Iivanainen, V., Lankinen, T., Aarnisalo, A.A., Sivonen, V., ... , Saarma, M., ... , Pirvola, U. MANF supports the inner hair cell synapse and the outer haircell stereocilia bundle in the cochlea. – *Life Science Alliance*, 2021, doi:10.26508/lsa.202101068

Jasmin, M., Ahn, E.H., Voutilainen, M.H., Fombonne, J., Guix, C., Viljakainen, T., ... , Saarma, M., ... , Ye, K. Netrin-1 and its receptor DCC modulate survival and death of dopamine neurons and Parkinson's disease features. – *EMBO Journal*, 2021, 40 (3), e105537. doi:10.15252/embj.2020105537

Jaumotte, J.D., Saarma, M., Zigmond, M.J. Protection of dopaminergic neurons by CDNF and neurturin variant N4 against MPP⁺ in dissociated cultures from rat mesencephalon. – *PLoS One*, 2021, 16 (2), e0245663. doi:10.1371/journal.pone.0245663

Kovaleva, V., Saarma, M. Endoplasmic reticulum stress regulators: New drug targets for Parkinson's disease. – *Journal of Parkinson's Disease*, 2021, 11 (s2), S219-S228. doi:10.3233/JPD-212673

Lindholm, P., Saarma, M. Cerebral dopamine neurotrophic factor protects and repairs dopamine neurons by novel mechanism. – *Molecular Psychiatry*, 2021. doi:10.1038/s41380-021-01394-6

Renko, J.M., Mahato, A.K., Visnapuu, T., Valkonen, K., Karelson, M., Voutilainen, M.H., Saarma, M., ... , Sidorova, Y.A. Neuroprotective potential of a small molecule RET agonist in cultured dopamine neurons and hemiparkinsonian rats. – *Journal of Parkinson's Disease*, 2021, 11 (3), 1023–1046. doi:10.3233/JPD-202400

Renko, J.-M., Voutilainen, M.H., Visnapuu, T., Sidorova, Y.A., Saarma, M., Tuominen, R.K. GDNF receptor agonist alleviates motor imbalance in unilateral 6-hydroxydopamine model of Parkinson's disease. – *Frontiers in Neurology and Neuroscience Research*, 2020, 1, 100004, 1–11.

Selberg, S., Yu, L.Y., Bondarenko, O., Kankuri, E., Seli, N., Kovaleva, V., ... , Saarma, M., Karelson, M. Small-molecule inhibitors of the RNA M6A demethylases FTO potently support the survival of dopamine neurons. – *International Journal of Molecular Sciences*, 2021, 22, 9, 4537. doi:10.3390/ijms22094537

* * *

Saarma, M., Voutilainen, M.H., Airavaara, M., Yu, L.Y., Lindahl, M. C-terminal CDNFand MANF fragments, pharmaceutical compositions comprising same and uses thereof. United States Patent Application No 17/043028; Publication Date: 01/14/2021; Filing Date: 03/29/2019.

Tarmo SOOMERE

Soomere, T. (vast toim). Eesti Vabariigi preemiad 2021. – Tallinn : Eesti Teaduste Akadeemia, 2021. – 358 lk.

Tuisk, T. (koost), Jakobson, S., Järv, J. (toim), Soomere T. (vast toim). Eesti Teaduste Akadeemia aastaraamat. Faktid ja arvud 2020. Annales Academiae Scientiarum Estonicae XXVI (53) 2020. – Tallinn : Eesti Teaduste Akadeemia, 2021. – 104 lk.

Tuisk, T., Soomere, T. (vast toim). Eesti Teaduste Akadeemia sõnas ja pildis 2020. – Tallinn : Eesti Teaduste Akadeemia, 2021. – 129 lk.

Tuisk, T., Tamm, K. (koost ja toim), Soomere, T. (vast toim). Estonian Academy of Sciences Yearbook 2020. Annales Academiae Scientiarum Estonicae XXVI(53) 2020. – Tallinn : Eesti Teaduste Akadeemia, 2021. – 176 lk.

* * *

Barzehkar, M., Parnell, K.E., Soomere, T., Dragovich, D., Engstrom, J. Decision support tools, systems, and indices for sustainable coastal planning and management: A review. – Ocean & Coastal Management, 2021, 212, 105813. doi:10.1016/j.ocecoaman.2021.105813

Delpeche-Ellmann, N., Giudici, A., Rätsep, M., Soomere, T. Observations of surface drift and the effects induced by wind and waves in the Baltic Sea for the period 2011–2018. – Estuarine, Coastal and Shelf Science, 2021, 249, 107071. doi:10.1016/j.ecss.2020.107071

Giudici, A., Suara, K.A., Soomere, T., Brown R. Tracking areas with increased likelihood of surface particles aggregation in the Gulf of Finland: A first look at persistent Lagrangian Coherent Structures (LCS). – Journal of Marine Systems, 2021, 217, 103514. doi:10.1016/j.jmarsys.2021.103514

Pelinovsky, E., Talipova, T., Soomere, T. The structure of algebraic solitons and compactons in the generalized Korteweg-de Vries equation. – Physica D, 2021, 419, 132785. doi:10.1016/j.physd.2020.132785

Räämet, A., Soomere, T. Spatial pattern of quality of historical wave climate reconstructions for the Baltic Sea. – Boreal Environment Research, 2021, 26, 29–41.

Ghosh, A., Suara, K., McCue, S.W., Yu, Y., Soomere, T., Brown, R.J. Persistency of debris accumulation in tidal estuaries using Lagrangian coherent structures. – Science of the Total Environment, 2021, 781, 146808. doi:10.1016/j.scitotenv.2021.146808

Kudryavtseva, N., Soomere, T., Männikus, R. Non-stationary analysis of water level extremes in Latvian waters, Baltic Sea, during 1961–2018. – Natural Hazards and Earth Systems Sciences, 2021, 21 (4), 1279–1296. doi:10.5194/nhess-21-1279-2021

Najafzadeh, F., Kudryavtseva, N., Soomere, T. Effects of large-scale atmospheric circulation on the Baltic Sea wave climate: application of EOF method on multi-mission satellite altimetry data. – *Climate Dynamics*, 2021, 57 (11–12), 3465–3478. doi:10.1007/s00382-021-05874-x

Rätsep, M., Parnell, K.E., Soomere, T., Kruusmaa, M., Ristolainen, A., Tuhtan, J.A. Surface vessel localization from wake measurements using an array of pressure sensors in the littoral zone. – *Ocean Engineering*, 2021, 233, 109156. doi:10.1016/j.oceaneng.2021.109156

Weisse, R., Dailidienė, I., Hünicke, B., Kahma, K., Madsen, K., Omstedt, A., Parnell, K., Schöne, T., Soomere, T., Zhang, W., Zorita, E. Sea level dynamics and coastal erosion in the Baltic Sea region. – *Earth Systems Dynamics*, 2021, 12, 871–898. doi:10.5194/esd-12-871-2021

* * *

Soomere, T. Teaduspreemiate komisjoni esimehe tervitus. Teaduspreemiate tutvustus. – Eesti Vabariigi preemiad 2021. Eesti Teaduste Akadeemia, Tallinn, 2021, 14–19.

Soomere, T. [Kõne Paide keskväljakul]. – 33 kõnet. Paide 3000. Paide teater, 2021, 46–58.

Martin ZOBEL

Aavik, T., Träger, S., Zobel, M., Honnay, O., Van Geel, M., Bueno, C.G., Koorem, K. The joint effect of host plant genetic diversity and arbuscular mycorrhizal fungal communities on restoration success. – *Functional Ecology*, 2021, 35 (12), 2621–2634. doi:10.1111/1365-2435.13914

Adenan, S., Oja, J., Alatalo, J.M., Shram, A.M., Alsafran, M., Tedersoo, L., Zobel, M., Ahmed, T. Diversity of arbuscular mycorrhizal fungi and its chemical drivers across dryland habitats. – *Mycorrhiza*, 2021, 31 (6), 685–697. doi:10.1007/s00572-021-01052-3

Bueno, C.G., Davison, J., Leon, D., Meng, Y., Öpik, M., Zobel, M., Moora, M. Towards a consistent benchmark for plant mycorrhizal association databases. – *New Phytologist*, 2021, 231 (3), 913–916. doi:10.1111/nph.17417

Bueno, C.G., Gerz, M., Moora, M., Leon, D., Gomez-Garcia, D., de Leon, D.G., ..., Zobel, M. Distribution of plant mycorrhizal traits along an elevational gradient does not fully mirror the latitudinal gradient. – *Mycorrhiza*, 2021, 31 (2), 149–159. doi:10.1007/s00572-020-01012-3

Carmona, C.P., Bueno, C.G., Toussaint, A., Träger, S., Díaz, S., Moora, M., ..., Zobel, M., Tamme, R. Fine-root traits in the global spectrum of plant form and function. – *Nature*, 2021, 597 (7878), 683–687. doi:10.1038/s41586-021-03871-y

Davison, J., Moora, M., Semchenko, M., Adenan, S.B., Ahmed, T., Akhmetzhanova, A.A., ..., Zobel, M., Opik, M. Temperature and pH define the realised niche space of arbuscular mycorrhizal fungi. – *New Phytologist*, 2021, 231 (2), 763–776. doi:10.1111/nph.17240

Lepik, A., Abakumova, M., Davison, J., Zobel, K., Semchenko, M. Spatial mapping of root systems reveals diverse strategies of soil exploration and resource contest in grassland plants. – *Journal of Ecology*, 2021, 109 (2), 652–663. doi:10.1111/1365-2745.13535

Liu, S., Moora, M., Vasar, M., Zobel, M., Öpik, M., Koorem, K. Arbuscular mycorrhizal fungi promote small-scale vegetation recovery in the forest understorey. – *Oecologia*, 2021, 197 (3), 685–697. doi:10.1007/s00442-021-05065-9

Neuenkamp, L., Zobel, M., Koorem, K., Jairus, T., Davison, J., Öpik, M., …, Moora, M. Light availability and light demand of plants shape the arbuscular mycorrhizal fungal communities in their roots. – *Ecology Letters*, 2021, 24 (3), 426–437. doi:10.1111/ele.13656

Sabatini, F.M., Lenoir, J., Hattab, T., Arnst, E.A., Chytrý, M., Dengler, J., …, Zobel, M., Bruelheide, H. sPlotOpen – An environmentally balanced, open-access, global dataset of vegetation plots. – *Global Ecology and Biogeography*, 2021, 30 (9), 1740–1764. doi:10.1111/geb.13346

Sepp, S.-K., Davison, J., Moora, M., Neuenkamp, L., Oja, J., Roslin, T., …, Zobel, M. Woody encroachment in grassland elicits complex changes in the functional structure of above- and belowground biota. – *Ecosphere*, 2021, 12 (5), e03512. doi:10.1002/ecs2.3512

Tamme, R., Pärtel, M., Kõljalg, U., Laanisto, L., Liira, J., Mander, Ü., …, Zobel, M. Global macroecology of nitrogen-fixing plants. – *Global Ecology and Biogeography*, 2021, 30 (2), 514–526. doi:10.1111/geb.13236

Van Geel, M., Aavik, T., Ceulemans, T., Träger, S., Mergeay, J., Peeters, G., …, Zobel, M., …, Honnay, O. The role of genetic diversity and arbuscular mycorrhizal fungal diversity in population recovery of the semi-natural grassland plant species *Succisa pratensis*. – *BMC Ecology and Evolution*, 2021, 21 (1), 200. doi:10.1186/s12862-021-01928-0

Vasar, M., Davison, J., Sepp, S.-K., Öpik, M., Moora, M., Koorem, K., …, Zobel, M. Arbuscular mycorrhizal fungal communities in the soils of desert habitats. – *Microorganisms*, 2021, 9 (2), 229. doi:10.3390/microorganisms9020229

Marek TAMM

Ibrus, I., Schich, M., Tamm, M. Cultural science meets cultural data analytics. – *Cultural Science Journal*, 2021, 13 (1), 1–15. doi:10.2478/csj-2021-0001

Ibrus, I., Schich, M., Tamm, M. Digihumanitaariast kultuuriandmete analüüsini. – *Keel ja Kirjandus*, 2021, 64 (8–9), 671–688.

Simon, Z.B., Tamm, M., Domańska, E. Anthropocenic historical knowledge: promises and pitfalls. – *Rethinking History*, 2021, 25 (4), 406–439. doi:10.1080/13642529.2021.1985224

Simon, Z.B., Tamm, M. Historical futures. – *History and Theory*, 2021, 60 (1), 3–22. doi:10.1111/hith.12190

Tamm, M. Krull, Hasso; Kull, Kalevi; Lotman, Juri, Raud, Rein; Taagepera, Rein. – Delsol, C., Nowicki, J. (eds). *La vie de l'esprit en Europe centrale et orientale depuis 1945: Dictionnaire encyclopédique*. Les Editions du Cerf, Paris, 2021, 718–721; 734–735; 822–823; 873–874.

Tamm, M. Memory. – van den Akker, C. (ed). *The Routledge Companion to Historical Theory*. Routledge, London & New York, 2021, 544–557.

Tamm, M. Representation. – Berger, S. (ed). Bloomsbury History: Theory and Method. Bloomsbury Academic, London, 2021 [e-ressurss]

Tamm, M. Storia orientata al futuro. – E/C, 2021, 15 (32), 42–48.

Tiit TAMMARU

van Ham, M., Tammaru, T., Ubarevičienė, R., Janssen, H. (eds). Urban Socio-Economic Segregation and Income Inequality. A Global Perspective. – Springer International Publishing, 2021. – 513 p. – doi:10.1007/978-3-030-64569-4

* * *

Puur, A., Rahnu, L., Tammaru, T. Neighbourhoods and workplaces: are they related to the fertility of immigrants and their descendants? A register-based study of high-fertility groups in Finland, 1999–2014. – Journal of International Migration and Integration, 2021, 1–23. doi:10.1007/s12134-020-00797-8

Puur, A., Rahnu, L., Tammaru, T. What is the association between the ethnic composition of neighbourhoods, workplaces and schools and the formation of mixed-ethnic unions? – Population Space and Place, 2021, e2504. doi:10.1002/sp.2504

Sinitsyna, A., Torpan, K., Eamets, R., Tammaru, T. Overlap between industrial niching and workplace segregation: Role of immigration policy, culture and country of origin. – Social Inclusion, 2021, 9 (2), 179–191. doi:10.17645/si.v9i2.3640

Tammaru, T., Knapp, D., Silm, S., Van Ham, M., Witlox, F. Spatial underpinnings of social inequalities: A vicious circles of segregation approach. – Social Inclusion, 2021, 9 (2), 65–76. doi:10.17645/si.v9i2.4345

Tammaru, T., Sinitsyna, A., Akhavi Zadegan, A., van Ham, M., Marcińczak, S., Musterd, S. Income inequality and residential segregation in European cities. – Pryce, G., Wang, Y.P., Chen, Y., Shan, J., Wei, H. (eds). Urban Inequality and Segregation in Europe and China. Springer, 2021, 39–54. doi:10.1007/978-3-030-74544-8

Tõnu-Andrus TANNEBERG

Jürjo, M., Kaasik, P., Kopõtin, I., Lill, H., Luts, K., Maripuu, M., Mölder, H., Noormets, T., Nõmm, T., Piirimäe, K., Praks, H., Pärn, J., Rosenthal, R., Salo, U., Saueauk, M., Seene, A., Tannberg, T. Eesti sõjaajalugu. Valitud peatükke Vabadussõjast tänapäevani / koost Tõnu Tannberg. – Tartu : Tartu Ülikooli Kirjastus, 2021. – 674 lk.

Määsalu, A., Vahtre, S., Laur, M., Rosenberg, T., Liim, A., Pajur, A., Tannberg, T., Vahter, T. Eesti ajalugu. Kronoloogia. – Tallinn : Tänapäev, 2021. – 532 lk.

Tannberg, T., Tamman, H. (koost). Rahvusarhiivi tegevuse ülevaade 2019–2020. – Tartu : Rahvusarhiiv, 2021. – 107 lk.

* * *

Tannberg, T. „Kuid kirjanike liit pole seni veel kõiki suutnud liita ühiseks perek”. Lisandusi Eesti Nõukogude Kirjanike Liidu asutamise loole aastatel 1943–1946. – Keel ja Kirjandus, 2021, 7, 571–598.

Tannberg, T. „Kõik noored mehed Eestimaalt, neid kutsub kroonu ära säält...”. Vene-Türgi sõja aegsed mobilisatsioonid Eestis üldise sõjaväekohustuse kontekstis. – Põltsam-Jürjo, I., Kivimäe, J. (koost). Kultuur ja rahvas. Mälestusteos Ea Jansenile. Rahvusarhiiv, Tartu, 2021, 319–340.

Tannberg, T. Loengusari "Keerdkäigud" 2017–2020. – Tannberg, T., Tamman, H. (koost). Rahvusarhiivi tegevuse ülevaade 2019–2020. Rahvusarhiiv, Tartu, 2021, 70–74.

Elmo TEMPEL

Baqui, P.O., Marra, V., Casarini, L., Angulo, R., Díaz-García, L.A., Hernández-Monteagudo, C., ... , Tempel, E. ... , Taylor, K. The miniJPAS survey: star-galaxy classification using machine learning. – *Astronomy & Astrophysics*, 2021, 645, A87, 1–19. doi:10.1051/0004-6361/202038986

Tuominen, T., Nevalainen, J., Tempel, E., Kuutma, T., Wijers, N., Schaye, J., ... , Ganeshaiyah Veena, P. An EAGLE view of the missing baryons. – *Astronomy & Astrophysics*, 2021, 646, A156, 1–20. doi:10.1051/0004-6361/202039221

Kipper, R., Tamm, A., Tempel, E., de Propris, R., Ganeshaiyah Veena, P. The role of stochastic and smooth processes in regulating galaxy quenching. – *Astronomy & Astrophysics*, 2021, 647, A32, 1–11. doi:10.1051/0004-6361/202039648

Einasto, M., Kipper, R., Tenjes, P., Lietzen, H., Tempel, E., Liivamägi, L.J., Nurmi, P. The Corona Borealis supercluster: Connectivity, collapse, and evolution. – *Astronomy & Astrophysics*, 2021, 649, A51, 1–23. doi:10.1051/0004-6361/202040200

González Delgado, R.M., Díaz-García, L.A., de Amorim, A., Bruzual, G., Cid Fernandes, R., Pérez, E., ... , Tempel, E., J-PAS Collaboration. The miniJPAS survey: identification and characterization of galaxy populations with the J-PAS photometric system. – *Ibid.*, A79, 1–26. doi:10.1051/0004-6361/202039849

Muru, M. M., Tempel, E. Assessing the reliability of the Bisous filament finder. – *Ibid.*, A108, 1–10. doi:10.1051/0004-6361/202039169

Bonoli, S., Marín-Franch, A., Varela, J., Vázquez Ramió, H., Abramo, L.R., Cenarro, A.J., ... , Tempel, E., ... , Telles, E. The miniJPAS survey: A preview of the Universe in 56 colors. – *Astronomy & Astrophysics*, 2021, 653, A31, 1–37. doi:10.1051/0004-6361/202038841

López-Sanjuan, C., Yuan, H., Vázquez Ramió, H., Varela, J., Cristóbal-Hornillos, D., Tremblay, P.-E., ... , Tempel, E., ... , Sodré, L. J-PLUS: Systematic impact of metallicity on photometric calibration with the stellar locus. – *Astronomy & Astrophysics*, 2021, 654, A61, 1–18. doi:10.1051/0004-6361/202140444

Hernán-Caballero, A., Varela, J., López-Sanjuan, C., Muniesa, D., Civera, T., Chaves-Montero, J., ... , Tempel, E., ... , Martínez-Solaeche, G. The miniJPAS survey:

Photometric redshift catalogue. – *Ibid.*, A101, 1–24. doi:10.1051/0004-6361/202141236

Ganeshiaiah Veena, P., Cautun, M., van de Weygaert, R., Tempel, E., Frenk, C.S. Cosmic Ballet III: Halo spin evolution in the cosmic web. – Monthly Notices of the Royal Astronomical Society, 2021, 503 (2), 2280–2299. doi:10.1093/mnras/stab411

Kipper, R., Tenjes, P., Tempel, E., de Propris, R. Non-equilibrium in the solar neighbourhood using dynamical modelling with Gaia DR2. – Monthly Notices of the Royal Astronomical Society, 2021, 506 (4), 5559–5572. doi:10.1093/mnras/stab2104

Wang, P., Libeskind, N.I., Tempel, E., Kang, X., Guo, Q. Possible observational evidence for cosmic filament spin. – Nature Astronomy, 2021, 5, 839–845. doi:10.1038/s41550-021-01380-6

Raimund UBAR

Jenihhin, M., Oyeniran, A., Raik, J., Ubar, R. Implementation-independent test generation for a large class of faults in RISC processor modules. – 24th Euromicro Conference on Digital System Design (DSD). IEEE, Palermo, 2021, 1–6. doi:10.1109

Oyeniran, A., Ademilua, T., Kruus, M., Ubar, R. Environment for innovative university research training in the field of digital test. – 2021 30th Annual Conference of the European Association for Education in Electrical and Information Engineering (EAEEIE). IEEE, Prague, 2021, 1–6. doi:10.1109

Raivo UIBO

Reinert-Hartwall, L., Siljander, H., Hätkönen, T., Vatanen, T., Iilonen, J., Niemelä, O., ..., Uibo, R., ..., DIABIMMUNE study group. Higher circulating EGF levels associate with a decreased risk of IgE sensitization in young children. – Pediatric Allergy and Immunology, 2021, 33 (1), e13613. doi:10.1111/pai.13613

Ruohutula, T., Kondrashova, A., Lehtonen, J., Oikarinen, S., Hämäläinen, A.M., Niemelä, O., ..., DIABIMMUNE Study Group (*incl.* Uibo, R.). Immunomodulatory effects of rhinovirus and enterovirus infections during the first year of life. – Frontiers in Immunology, 2021, 11, 567046. doi:10.3389/fimmu.2020.567046

Šunina, M., Alnek, K., Kisand, K., Uibo, R. Human CD4+ and CD8+ T lymphocyte subpopulations have significantly different surface expression patterns of CD226 and TIGIT molecules. – Scandinavian Journal of Immunology, 2021, 94 (3), e13089. doi:10.1111/sji.13089

Jaan UNDUSK

Aabrams, V., Friedenthal, M., Friedenthal, T.-E., Kaju, K., Kala, T., Kaur, K., Klöker, M., Leppik, L., Lukas, L., Mänd, A., Piirimäe, P., Plath, U., Põldvee, A., Reimo, T., Šemeta, A., Undusk, J., Viiding, K. Balti kirjakultuuri ajalugu I. Keskused ja kandjad / koost Liina Lukas. – Tartu : Tartu Ülikooli Kirjastus, 2021. – 304 lk.

* * *

Undusk, J. Käest kinni. Krossiga. – Tuna, 2021, 1, 2–8.

Undusk, J. Varaseid mälestusi Valtonist. – Arvo Valton Vallikivi. Varia. Kirjastuskeskus, Tallinn, 2021, 449–459. (Kogutud teosed; 28).

Veiko URI

Aun, K., Kukumägi, M., Varik, M., Becker, H., Aosaar, J., Uri, M., Buht, M., Uri, V. Short-term effect of thinning on the carbon budget of young and middle-aged silver birch (*Betula pendula* Roth) stands. – Forest Ecology and Management, 2021, 480, 118660.
doi:10.1016/j.foreco.2020.118660

Aun, K., Kukumägi, M., Varik, M., Becker, H., Aosaar, J., Uri, M., … , Uri, V. Short-term effect of thinning on the carbon budget of young and middle-aged Scots pine (*Pinus sylvestris* L.) stands. – Forest Ecology and Management, 2021, 492, 119241.
doi:10.1016/j.foreco.2021.119241

Mart USTAV

Liblekas, L., Piirsoo, A., Laanemets, A., Tombak, E. M., Laaneväli, A., Ustav, E., Ustav, M., Piirsoo, M. Analysis of the replication mechanisms of the human papillomavirus genomes. – Frontiers in Microbiology, 2021, 12, 738125. 10.3389/fmicb.2021.738125

Naaber, P., Tserel, L., Kangro, K., Sepp, E., Jürjenson, V., Adamson, A., … , Ustav, M., … , Peterson, P. Dynamics of antibody response to BNT162b2 vaccine after six months: A longitudinal prospective study. – The Lancet Regional Health – Europe, 2021, 10, 100208.
10.1016/j.lanepe.2021

Tarmo UUSTALU

Maarand, H., Uustalu, T. Operational semantics with semicommutations. – Journal of Logical and Algebraic Methods in Programming, 2021, 121, 100677.
doi:10.1016/j.jlamp.2021.100677

Uustalu, T., Veltri, N., Zeilberger, N. Deductive systems and coherence for skew prounital closedcategories. – Sacerdoti Coen, C., Tiu, A. (eds). Proc. of 15th Int. Wksh. on Logical Frameworks and Metalanguages: Theory and Practice, LFMT 2020 (Paris, June 2020). Open Publishing Assoc., 2021, 35–53. (Electron. Proc.in Theor. Comput. Sci.; 332).
doi:10.4204/eptcs.332.3

Uustalu, T., Veltri, N., Zeilberger, N. Proof theory of partially normal skew monoidal categories. – Spivak, D.I., Vicary, J. (eds). Proc. of 3rd Ann. Int. Applied Category Theory Conf., ACT 2020 (Cambridge, MA, July 2020). Open Publishing Assoc., 2021, 230–246. (Electron. Proc. in Theor. Comput. Sci.; 333). doi:10.4204/eptcs.333.16

Uustalu, T., Veltri, N., Zeilberger, N. The sequent calculus of skew monoidal categories. – Casadio, C., Scott, P.J. (eds). Joachim Lambek: The Interplay of Mathematics, Logic, and Linguistics. Springer, 2021, 377–406. (Outstanding Contributions to Logic; 20). doi:10.1007/978-3-030-66545-6_11

Gennadi VAINIKKO

Vainikko, G. Murruliselt diferentseeruvate funktsioonide klassi kirjeldusi. – Leiger, T. (toim). Aastaraamat 2018. Eesti Matemaatika Selts, Tartu, 2021, 40–44.

Urmas VARBLANE

Juust, M., Vahter, P., Varblane, U. Trade effects of the EU–South Korea free trade agreement in the automotive industry. – Journal of East-West Business, 2021, 27 (1), 1–29

Roosaar, L., Varblane, U., Masso, J. Churning and labor productivity in economic crisis, differences between foreign and domestic firms. – Eastern European Economics, 2021, 1–36. doi:10.1080/00128775.2021.1971540

* * *

Varblane, U. Majandusteadlane, kes otsis lahendusi, mitte probleeme. – Runnel, H. (toim). Töö, turg ja tulu. Majandusvaatlusi. Ilmamaa, Tartu, 2021, 329–344. (Eesti mõttelugu; 158).

Eero VASAR

Hade, A.C., Philips, M.A., Reimann, E., Jagomäe, T., Eskla, K.L., Traks, T., … , Vasar, E., Väli, M. Chronic alcohol use induces molecular genetic changes in the dorsomedial thalamus of people with alcohol-related disorders. – Brain Sciences, 2021, 11 (4), 435. doi:10.3390/brainsci11040435

Heinla, K., Vasar, E., Sedman, T., Volke, V. A GLP-1 receptor agonist inhibits aldosterone release in healthy volunteers. – Hormone and Metabolic Research, 2021, 53 (6), 402–407. doi:10.1055/a-1498-7098

Jagomäe, T., Seppa, K., Reimets, R., Pastak, M., Plaas, M., Hickey, M.A., … , Vasar, E., … , Plaas, M. Early intervention and lifelong treatment with GLP1 receptor agonist liraglutide in a Wolfram syndrome rat model with an emphasis on visual neurodegeneration, sensorineural hearing loss and diabetic phenotype. – Cells, 2021, 10 (11), 3193. doi:10.3390/cells10113193

Jagomäe, T., Singh, K., Philips, M.A., Jayaram, M., Seppa, K., Tekko, T., … , Vasar, E., Lilleväli, K. Alternative promoter use governs the expression of IgLON cell adhesion molecules in histogenetic fields of the embryonic mouse brain. – International Journal of Molecular Sciences, 2021, 22 (13), 6955. doi:10.3390/ijms22136955

Kaare, M., Mikheim, K., Lilleväli, K., Kilk, K., Jagomäe, T., Leidmaa, E., ... , Vasar, E., Philips, M.A. High-fat diet induces pre-diabetes and distinct sex-specific metabolic alterations in *Negr1*-deficient mice. – *Biomedicines*, 2021, 9 (9), 1148. doi:10.3390/biomedicines9091148

Loite, U., Raam, L., Reimann, E., Reemann, P., Prans, E., Traks, T., Vasar, E., ... , Kõks, S. The expression pattern of genes related to melanogenesis and endogenous opioids in psoriasis. – *International Journal of Molecular Sciences*, 2021, 22 (23), 13056. doi:10.3390/ijms222313056

Punapart, M., Seppa, K., Jagomäe, T., Liiv, M., Reimets, R., Kirillov, S., ... , Vasar, E., Plaas, M. The expression of RAAS key receptors, Agtr2 and Bdkrb1, is downregulated at an early stage in a rat model of Wolfram syndrome. – *Genes (Basel)*, 2021, 12 (11), 1717. doi:10.3390/genes12111717

Raud, S., Raud, J., Jõgi, I., Piller, C.T., Plank, T., Talviste, R., ... , Vasar, E. The production of plasma activated water in controlled ambient gases and its impact on cancer cell viability. – *Plasma Chemistry and Plasma Processing*, 2021, 41 (5), 1381–1395. doi:10.1007/s11090-021-10183-6

Seppa, K., Jagomäe, T., Kukker, K.G., Reimets, R., Pastak, M., Vasar, E., ... , Plaas, M. Liraglutide, 7,8-DHF and their co-treatment prevents loss of vision and cognitive decline in a Wolfram syndrome rat model. – *Scientific Reports*, 2021, 11 (1), 2275. doi:10.1038/s41598-021-81768-6

Vanaveski, T., Molchanova, S., Pham, D.D., Schäfer, A., Pajanoja, C., Narvik, J., ... , Vasar, E., ... , Lindholm, D. PGC-1 α signaling increases GABA(A) receptor subunit α 2 expression, GABAergic neurotransmission and anxiety-like behavior in mice. – *Frontiers in Molecular Neuroscience*, 2021, 14, 588230. doi:10.3389/fnmol.2021.588230

Varul, J., Eskla, K.L., Piirsalu, M., Innos, J., Philips, M.A., Visnapuu, T., ... , Vasar, E. Dopamine system, NMDA receptor and EGF family expressions in brain structures of Bl6 and 129Sv strains displaying different behavioral adaptation. – *Brain Sciences*, 2021, 11 (6), 725. doi:10.3390/brainsci11060725

Yan, L., Gu, M.Q., Yang, Z.Y., Xia, J., Li, P., Vasar, E., ... , Song, C. Endogenous n-3 PUFAs attenuated olfactory bulbectomy-induced behavioral and metabolomic abnormalities in Fat-1 mice. – *Brain, Behavior and Immunity*, 2021, 96, 143–153. doi:10.1016/j.bbi.2021.05.024

* * *

Haring, L., Vasar, E. Kanepi tarvitamine ja vaimse tervise probleemid Eesti noorte ja täisealiste hulgas. – *Eesti Arst*, 2021, 100 (3), 147–155.

Haring, L., Vasar, E. Laiendatud endokannabinoidsüsteem ning kannabinoidide mõju noore inimese ajutegevusele. – *Ibid.*, 157–165.

Haring, L., Leedo, A., Kisand, H., Voormansik, L., Viimsalu, A., Karis, K., ... , Vasar, E. Uimastite tarvitamine Eesti noorte ja täisealiste seas. AAA-uuringu esmased tulemused. – *Eesti Arst*, 2021, 100 (1), 15–23.

Vasar, E. 2021. aasta Nobeli füsioloogia või meditsiini preemia anti kehameelte molekulaarse sisendi selgitamise eest. – Eesti Arst, 2021, 100 (11), 600–602.

Vasar, E. Professor Jüri Saarma – 100. – Eesti Arst, 2021, 100 (10), 583.

Vasar, E. Väikelapsed kulutavad sedavõrd palju energiat, justkui oleksid mõnest teisest liigist. – Horisont, 2021, 3, 3.

Richard VILLEMS

Sahakyan, H., Margaryan, A., Saag, L., Karmin, M., Flores, R., Haber, M., ... Villems, R. Origin and diffusion of human Y chromosome haplogroup J1-M267. – Scientific Reports, 2021, 11, 6659. 10.1038/s41598-021-85883-2.

Jaak VILO

Kunnappu, K., Ioannou, S., Ligi, K., Kolde, R., Laur, S., Vilo, J., ... , Reisberg, S. Design of a framework to detect temporal clinical event trajectories from health data standardized to the OMOP CDM. – OHDSI Global Symposium 2021. Observational Health Data Sciences And Informatics (OHDSI).

Kunnappu, K., Ioannou, S., Ligi, K., Kolde, R., Laur, S., Vilo, J., ... , Reisberg, S. Trajectories: a framework for detecting temporal clinical event sequences from health data standardized to the OMOP Common Data Model. – medRxiv, 2021. doi:10.1101/2021.11.18.21266518

Dmitri VINNIKOV

Strzelecki, R., Demidova, G., Vinnikov, D. Industrial and Technological Applications of Power Electronics Systems. – MDPI, 2021. – 384 p. – 10.3390/books978-3-0365-0823-8

Vinnikov, D., Kouro, S., Yang, Y. Emerging Converter Topologies and Control for Grid Connected Photovoltaic Systems. – MDPI, 2021. – 364 p. – doi:10.3390/books978-3-03943-910-2

* * *

Barath, J.G.N., Soundarajan, A., Stepenko, S., Husev, O., Vinnikov, D., Nguyen, M.-K. Topological review of quasi-switched boost inverters. – Electronics, 2021, 10 (12), 1485. doi:10.3390/electronics10121485

Blinov, A., Zinchenko, D., Rabkowski, J., Wrona, G., Vinnikov, D. Quasi single-stage three-phase filterless converter for EV charging applications. – IEEE Open Journal of Power Electronics, 2021, 3, 51–60. doi:10.1109/OJPEL.2021.3134460

Blinov, A., Verbytskyi, I., Peftitsis, D., Vinnikov, D. Regenerative passive snubber circuit for high-frequency link converters. – IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2021. doi:10.1109/JESTIE.2021.3066897

Blinov, A., Vinnikov, D., Romero-Cadaval, E., Martins, J., Peftitsis, D. Isolated high-frequency link PFC rectifier with high step-down factor and reduced energy circulation. – *Ibid.*, doi:10.1109/JESTIE.2021.3126226

Husev, O., Belikov, J., Matiushkin, O., Vinnikov, D., Ahmadiahangar, R., Vosoughi, N. Optimal tuning of resonant and repetitive based controller for single-phase buck-boost inverter with unfolding circuit. – *Ibid.*, doi:10.1109/JESTIE.2021.3121190

Chub, A., Vinnikov, D., Korkh, O., Jalakas, T., Demidova, G. Wide-range operation of high step-up DC-DC converters with multimode rectifiers. – *Electronics*, 2021, 10 (8), 914. doi:10.3390/electronics10080914

Chub, A., Vinnikov, D., Korkh, O., Malinowski, M., Kouro, S. Ultrawide voltage gain range microconverter for integration of silicon and thin-film photovoltaic modules in DC microgrids. – *IEEE Transactions on Power Electronics*, 2021, 36 (12), 13763–13778. doi:10.1109/TPEL.2021.3084918

Fesenko, A., Matiushkin, O., Husev, O., Vinnikov, D., Strzelecki, R., Kołodziejek, P. Design and experimental validation of a single-stage PV string inverter with optimal number of interleaved buck-boost cells. – *Energies*, 2021, 14 (9), 2448. doi:10.3390/en14092448

Husev, O., Vinnikov, D., Roncero-Clemente, C., Blaabjerg, F., Strzelecki, R. MPPT and GMPPT implementation for buck-boost mode control of quasi-Z-source inverter. – *IEEE Transactions on Industrial Electronics*, 2021. doi:10.1109/TIE.2021.3125658

Liu, W., Yang, Y., Kerekes, T., Vinnikov, D., Blaabjerg, F. Inductor current ripple analysis and reduction for quasi-Z-source inverters with an improved ZSVM6 strategy. – *IEEE Transactions on Power Electronics*, 2021, 36 (7), 7693–7704. doi:10.1109/TPEL.2020.3043102

Luo, W., Stynski, S., Chub, A., Franquelo, L.G., Malinowski, M., Vinnikov, D. Applications of utility-scale energy storage systems. – *IEEE Industrial Electronics Magazine*, 2021, 15 (4), 17–27. doi:10.1109/MIE.2020.3026169

Mashinchi Maher, H., Vinnikov, D., Chub, A., Korkh, O., Rosin, A., Babaei, E. Dual-mode magnetically integrated photovoltaic microconverter with adaptive mode change and global maximum power point tracking. – *IET Renewable Power Generation*, 2021, 15, 86–98. doi:10.1049/rpg2.12007

Mashinchi Maher, H., Vinnikov, D., Nozadian, M.H.B., Shokati Asl, E., Babaei, E., Chub, A. An embedded half-bridge Γ-Z-source inverter with reduced voltage stress on capacitors. – *Energies*, 2021, 14 (19), 1–23. doi:10.3390/en14196433

Sangwongwanich, A., Shen, Y., Chub, A., Liivik, E., Vinnikov, D., Wang, H., Blaabjerg, F. Design for accelerated testing of DC-link capacitors in photovoltaic inverters based on mission profiles. – *IEEE Transactions on Industry Applications*, 2021, 57 (1), 741–753. doi:10.1109/TIA.2020.3030568

Sidorov, V., Chub, A., Vinnikov, D., Bakeer, A. An overview and comprehensive comparative evaluation of constant-frequency voltage buck control methods for series resonant DC-DC converters. – *IEEE Open Journal of the Industrial Electronics Society*, 2021, 2, 65–79. doi:10.1109/OJIES.2020.3048003

Tran, V.-T., Nguyen, M.-K., Do, D.-T., Vinnikov, D. An SVM scheme for three-level quasi-switched boost T-type inverter with enhance voltage gain and capacitor voltage balance. – IEEE Transactions on Power Electronics, 2021, 36 (10), 11499–11508.
doi:10.1109/TPEL.2021.3071011

* * *

Abdel-Rahim, O., Chub, A., Blinov, A., Vinnikov, D. New high-gain non-inverting buck-boost converter. – IECON 2021 – 47th Annual Conference of the IEEE Industrial Electronics Society, Toronto, Canada, October 13–16, 2021. doi:10.1109/IECON48115.2021.9590003

Matiushkin, O., Vinnikov, D., Husev, O. Performance evaluation of the universal photovoltaic string converter during the operation in DC microgrid environment. – *Ibid.*, doi:10.1109/IECON48115.2021.9589473

Akhtar, Z., Zhu, J., Husev, O., Vinnikov, D., Yu, L. Proportional resonant controller tuning in three-phase four-leg VSI based on particle swarm optimization. – Proceedings of 2021 IEEE 19th International Power Electronics and Motion Control Conference (IEEE-PEMC), Gliwice, Poland, April 25–29, 2021. IEEE, 2021, 851–856.
doi:10.1109/PEMC48073.2021.9432607

Mashinchi Maher, H., Vinnikov, D., Chub, A., Sidorov, V. Topology morphing control of low-cost PV microconverters. – *Ibid.*,
doi:10.1109/PEMC48073.2021.9432496.

Awad, K., Abdel-Rahim, O., Gaafar, M.A., Orabi, M., Chub, A., Blinov, A., Vinnikov, D. Universal input voltage electrolytic capacitor-less LED driver with multi-channel output. – IEEE 62nd International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON). Riga, Latvia, November 15–17, 2021.

Hassanpour, N., Blinov, A., Chub, A., Vinnikov, D., Mohamed, A.A.O. A series partial power converter based on dual active bridge converter for residential battery energy storage system. – *Ibid.*

Hemmati, T., Ghavipanjeh Marangalu, M., Vosoughi Kurdkandi, N., Husev, O., Babaei, E., Vinnikov, D., Sabahi, M. A new single-phase single-stage switched-capacitor based seven-level inverter for grid-tied photovoltaic applications. – *Ibid.*

Mashinchi Maher, H., Saadatizadeh, Z., Chavoshipour Heris, P., Babaei, E., Vinnikov, D. A new high step-up switched-capacitor/inductor based DC-DC converter. – *Ibid.*

Mashinchi Maher, H., Salehi Vala, S., Basit Mirza, A., Babaei, E., Vinnikov, D. A novel extendable high gain step up DC-DC converter. – *Ibid.*

Mashinchi Maher, H., Vinnikov, D., Rahman, R. Performance benchmarking of Si and GaN MOSFETs in isolated buck-boost DC-DC converter. – *Ibid.*

Rahimpour, S., Matiushkin, O., Vosoughi Kurdkandi, N., Najafzadeh, M., Husev, O., Vinnikov, D. Model predictive control of a single-stage flying inductor based buck-boost grid-connected common-ground inverter. – *Ibid.*

Rahman, S., Sidorov, V., Chub, A., Vinnikov, D. High-frequency split-bobbin transformer design with adjustable leakage inductance. – *Ibid.*

Bakeer, A., Chub, A., Vinnikov, D. Series resonant DC-DC converter with an AC-switch-based full-bridge boost rectifier. – Annual IEEE Applied Power Electronics Conference and Exposition (APEC). Virtual Conference + Exposition, June 14-17, 2021.

Bakeer, A., Chub, A., Vinnikov, D., Blaabjerg, F. Effect of mission profile resolution on photovoltaic energy yield prediction in Python and MATLAB. – Proceedings of 2021 IEEE 15th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Florence, Italy, 14–16 July 2021. IEEE, 2021. doi:10.1109/CPE-POWERENG50821.2021.9501222

Mashinchi Maher, H., Chavoshipour Heris, P., Saadatizadeh, Z., Babaei, E., Vinnikov, D. A new coupled-inductor-based buck/boost DC/DC converter with soft switching for DC microgrid applications. – *Ibid.*, doi:10.1109/CPE-POWERENG50821.2021.9501195

Mashinchi Maher, H., Chub, A., Vinnikov, D., Blinov, A. Photovoltaic microconverter with integrated sub-modular power optimizer. – *Ibid.*, doi:10.1109/CPE-POWERENG50821.2021.9501179

Sidorov, V., Chub, A., Vinnikov, D. Accelerated global MPPT for multimode series resonant DC-DC converter. – *Ibid.*, doi:10.1109/CPE-POWERENG50821.2021.9501077

Jalakas, T., Kosenko, R., Chub, A., Vinnikov, D., Blinov, A. Current-fed partial power converter for photovoltaic applications in DC microgrids. – IECON 2021 – 47th Annual Conference of the IEEE Industrial Electronics Society, Toronto, Canada, October 13–16, 2021. doi:10.1109/IECON48115.2021.9589899

Mashinchi Maher, H., Shokati Asl, E., Babaei, E., Sabahi, M., Vinnikov, D., Chub, A. Half-bridge trans-Z-source inverter with high boost factor. – *Ibid.*, 1–6.

Sidorov, V., Chub, A., Vinnikov, D. Topology morphing control with soft transients for multimode series resonant DC-DC converter. – IEEE 22nd International Conference of Young Professionals in Electron Devices and Materials (EDM). Altai Republic, Russia, 30 June – 4 July 2021. IEEE, 2021. 10.1109/EDM52169.2021.9507621

Andres ÖPIK

Antipchik, M., Korzhikova-Vlakh, E., Polyakov, D., Tarasenko, I., Reut, J., Öpik, A., Syritski, V. An electrochemical biosensor for direct detection of hepatitis C virus. – Analytical Biochemistry, 2021, 624, doi:114196. 10.1016/j.ab.2021.114196

Raziq, A., Kidakova, A., Boroznjak, R., Reut, J., Öpik, A., Syritski, V. Development of a portable MIP-based electrochemical sensor for detection of SARS-CoV-2 antigen. – Biosensors & Bioelectronics, 178, 113029. doi:10.1016/j.bios.2021.113029