

A novel alumina – nanocarbon hybrid material

Ivanov, Roman; Anoshkin, Ilya; Nasibulin, Albert; **Hussainova, Irina**; Kauppinen, Esko NT13: Fourteenth International Conference on the Science and Applications of Nanotubes : 24-28 June, 2013, Espoo, Finland 2013 / p. 309

Alumina/graphene/Cu hybrids as highly selective sensor for simultaneous determination of epinephrine, acetaminophen and tryptophan in human urine

Taleb, Masoud; **Ivanov, Roman**; **Bereznev, Sergei**; Kazemi, Sayed Habib; **Hussainova, Irina** Journal of electroanalytical chemistry 2018 / p. 184-192 : ill <https://doi.org/10.1016/j.jelechem.2018.06.013> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Anisotropic thermal conduction in hierarchically structured composite using graphene-augmented alumina nanofibers

Saffarshamshirgar, Ali; **Ivanov, Roman**; Gasik, Michael; **Hussainova, Irina** XVI Conference and Exhibition Of The European Ceramic Society : abstract book 2019 / p. 167

Assessment of tribological performance of 3D printed macro features on the metallic surface

Antonov, Maksim; **Pohlak, Meelis**; **Ivanov, Roman**; **Kariminejad, Arash**; **Hussainova, Irina** Wear 2026 / art. 206398 <https://doi.org/10.1016/j.wear.2025.206398>

Bifunctional oxygen electrocatalyst based on Fe, Co, and nitrogen co-doped graphene-coated alumina nanofibers for Zn-air battery air electrode

Mooste, Marek; Ahmed, Zubair; Kapitulska, Pavels; **Ivanov, Roman**; Treshchalov, Alexey; Piirsoo, Helle-Mai; Kikas, Arvo; Kisand, Vambola; Kukli, Kaupo; **Hussainova, Irina**; Tammeveski, Kaido Applied Surface Science 2024 / art. 160024 <https://doi.org/10.1016/j.apsusc.2024.160024> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Biomechanical Features of Graphene-Augmented Inorganic Nanofibrous Scaffolds and Their Physical Interaction with Viruse

Gasik, Michael; **Ivanov, Roman**; Kazantseva, Jekaterina; Bilotsky, Yevgen; **Hussainova, Irina** Materials 2021 / art. 164 <https://doi.org/10.3390/ma14010164> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Chemical vapour deposition growth of graphene and carbon nanotubes on alumina

Ivanov, Roman; Anoshkin, Ilya; **Hussainova, Irina** TÜ ja TTÜ doktorikool "Funktsionaalsed materjalid ja tehnoloogiad" : 04.-05. märts 2014, Tartu 2014 / [1] p

Chemical vapour deposition of graphene coating onto ceramic nanofibers substrates and applications thereof =

Grafeenpinde keemiline aursadestus keraamilistele nanokiududele ja nende kasutus

Ivanov, Roman 2017 <https://digi.lib.ttu.ee/i/?9128>

Combustion synthesis of silicon carbide by magnesio-carbothermic reduction of amorphous and crystalline silica

Kirakosyan, Hasmik; Nazaretyan, Khachik; Beglaryan, Hayk; **Ivanov, Roman**; **Hussainova, Irina**; **Aydinyan, Sofiya** Proceedings of the Estonian Academy of Sciences 2025 / p. 260-265 <https://doi.org/10.3176/proc.2025.2.31>

Dichroic absorption of aligned graphene-augmented inorganic nanofibers in the terahertz regime

Xenidis, Nikolaos; Przewloka, Aleksandra; Stelmaszczyk, Kamil; Haras, Maciej; Smirnov, Serguei; Krajewska, Aleksandra; **Ivanov, Roman**; **Hussainova, Irina**; Oberhammer, Joachim; Skotnicki, Tomas; Mierczyk, Zygmunt; Lioubtchenko, Dmitri Applied materials today 2024 / art. 102245 <https://doi.org/10.1016/j.apmt.2024.102245> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Direct CVD growth of multi-layered graphene closed shells around alumina nanofibers

Ivanov, Roman; **Mikli, Valdek**; **Kübarsepp, Jakob**; **Hussainova, Irina** Engineering materials and tribology : selected, peer reviewed papers from the 24th International Baltic Conference on Engineering Materials & Tribology (BALTMATRIB & IFHTSE 2015), November 5-6, 2015, Tallinn, Estonia 2016 / p. 77-80 : ill <https://doi.org/10.4028/www.scientific.net/KEM.674.77> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Directional conductivity in layered alumina

Hussainova, Irina; **Saffarshamshirgar, Ali**; **Ivanov, Roman**; **Volobujeva, Olga**; Romanov, Alexey; Gasik, Michael Current applied physics 2022 / p. 68-73 : ill <https://doi.org/10.1016/j.cap.2020.06.009> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of basalt and silica additives on erosive wear resistance of cast ceramics

Baroninš, Janis; **Antonov, Maksim**; **Ivanov, Roman**; Shuliak, Volodymyr; **Hussainova, Irina** Proceedings of the Estonian Academy of Sciences 2016 / p. 144-151 : ill <https://doi.org/10.3176/proc.2016.2.05> https://artiklid.elnet.ee/record=b2768221*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of surface features stiffness on tribological performance of 3D printed light-weight Ti6Al4V alloy

Antonov, Maksim; **Pohlak, Meelis**; **Ivanov, Roman**; **Hussainova, Irina** Modern materials and manufacturing 2023 2024 / art. 040015 <https://doi.org/10.1063/5.0189279> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Electroconductive oxide ceramics with graphene-encapsulated fillers

Hussainova, Irina; Drozdova, Maria; Ivanov, Roman; Kale, Sudhir S.; Jasiuk, Iwona Proceedings of the 42nd international conference on advanced ceramics and composites 2019 / p. 251–258 <https://doi.org/10.1002/9781119543343.ch25> [Conference proceeding at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Encapsulated whiskers as electroconductive fillers for ceramics

Hussainova, Irina; Ivanov, Roman; Kale, Sudhir S.; Jasiuk, Iwona Short fibre reinforced cementitious composites and ceramics 2019 / p. 131–[139] https://doi.org/10.1007/978-3-030-00868-0_9

Fabrication of alumina nanocomposites reinforced by a novel type of alumina nanofiber and graphene coated alumina nanofiber

Drozdova, Maria; Ivanov, Roman; Aghayan, Marina; Hussainova, Irina; Dong, Minjie; Rodriguez, Miguel Angel Proceedings of the 9th International Conference of DAAAM Baltic Industrial Engineering, 24–26th April 2014, Tallinn, Estonia 2014 / p. 337–341 : ill

A few-layered graphene on alumina nanofibers for electrochemical energy conversion

Hussainova, Irina; Ivanov, Roman; Stamatin, Serban; Anoshkin, Ilya; Skou, Eivind; Nasibulin, Albert Carbon 2015 / p. 157–164 : ill <https://doi.org/10.1016/j.carbon.2015.03.004> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Functionally graded tunable microwave absorber with graphene-augmented alumina nanofibers

Shamshirgar, Ali Saffar; **Rojas Hernandez, Rocio Estefania;** Tewari, Girish C.; Fernandez, Jose Francisco; **Ivanov, Roman;** Karppinen, Maarit; **Hussainova, Irina** ACS applied materials & interfaces 2021 / p. 21613–21625 <https://doi.org/10.1021/acsami.1c02899> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Functionally gradient Ti6Al4V-TiB composite produced by spark plasma sintering

Liu, Le; Ivanov, Roman; Kumar, Rahul, 1993-; Minasyan, Tatevik; Antonov, Maksim; Hussainova, Irina IOP conference series : materials science and engineering 2021 / art. 012004, 6 p.: ill <https://doi.org/10.1088/1757-899X/1140/1/012004>

Graphene augmented nanofibers and their versatile applications

Hussainova, Irina; Ivanov, Roman Reviews on advanced materials and technologies 2020 / p. 9–25 <https://reviewsamt.com/issues/4>

Graphene coated alumina nanofibers as zirconia reinforcement

Ivanov, Roman; Hussainova, Irina; Aghayan, Marina; Petrov, Mihail Proceedings of the 9th International Conference of DAAAM Baltic Industrial Engineering, 24–26th April 2014, Tallinn, Estonia 2014 / p. 348–353 : ill

Graphene covered alumina nanofibers as toughening agent in alumina ceramics

Hussainova, Irina; Drozdova, Maria; Aghayan, Marina; Ivanov, Roman; Perez-Coll, Domingo 13th International Ceramics Congress. Part B 2014 / p. 49–53

Graphene-augmented nanofiber scaffolds demonstrate new features in cells behaviour

Kazantseva, Jekaterina; **Ivanov, Roman;** Gasik, Michael; Neumann, Toomas; **Hussainova, Irina** Scientific reports 2016 / art. 30150, p. 1–8 : ill <https://doi.org/10.1038/srep30150> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Graphene-augmented nanofiber scaffolds trigger gene expression switching of four cancer cell types

Kazantseva, Jekaterina; **Ivanov, Roman;** Gasik, Michael; Neuman, Toomas; **Hussainova, Irina** ACS biomaterials science & engineering 2018 / p. 1622–1629 : ill <https://doi.org/10.1021/acsbiomaterials.8b00228> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Graphene-ceramic hybrid nanofibers for ultrasensitive electrochemical determination of ascorbic acid

Taleb, Masoud; Ivanov, Roman; Bereznev, Sergei; Kazemi, Sayed Habib; **Hussainova, Irina** Microchimica acta 2017 / p. 897–905 : ill <https://doi.org/10.1007/s00604-017-2085-7> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Graphene-encapsulated aluminium oxide nanofibers as a novel type of nanofillers for electroconductive ceramics

Ivanov, Roman; Hussainova, Irina; Aghayan, Marina; Drozdova, Maria; Perez-Coll, Domingo; Rodriguez, Miguel Angel; Rubio-Marcos, Fernando Journal of the European Ceramic Society 2015 / p. 4017–4021 : ill <https://doi.org/10.1016/j.jeurceramsoc.2015.06.011> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

High-temperature wear performance of hBN-added Ni-W composites produced from combustion-synthesized powders

Kumar, Rahul, 1993-; Aydinyan, Sofiya; Ivanov, Roman; Liu, Le; Antonov, Maksim; Hussainova, Irina Materials 2022 / art. 1252 <https://doi.org/10.3390/ma15031252> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Hot sliding wear of 88 wt.% TiB-Ti composites from SHS produced powders

Kumar, Rahul, 1993-; Liu, Le; Antonov, Maksim; Ivanov, Roman; Hussainova, Irina Materials 2021 / art. 1242, 14 p.: ill <https://doi.org/10.3390/ma14051242> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Hybrid graphene/alumina nanofibers for electroconductive zirconia

Drozdova, Maria; Perez-Coll, Domingo; **Aghayan, Marina; Ivanov, Roman;** Rodriguez, Miguel Angel; **Hussainova, Irina** Engineering materials and tribology : selected, peer reviewed papers from the 24th International Baltic Conference on Engineering Materials & Tribology (BALTMATRIB & IFHTSE 2015), November 5-6, 2015, Tallinn, Estonia 2016 / p. 15-20 : ill <https://doi.org/10.4028/www.scientific.net/KEM.674.15> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Hybrid graphene-ceramic nanofibre network for spontaneous neural differentiation of stem cells

Kazantseva, Jekaterina; **Hussainova, Irina; Ivanov, Roman;** Neumann, Toomas; Gasik, Michael Interface focus 2018 / 6 p. : ill <https://doi.org/10.1098/rsfs.2017.0037> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Laser powder-bed fusion of Mo(Si,Al)₂ – based composite for elevated temperature applications

Minasyan, Tatevik; Ivanov, Roman; Toyserkani, Ehsan; **Hussainova, Irina** Journal of alloys and compounds 2021 / art. 161034 <https://doi.org/10.1016/j.jallcom.2021.161034> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Layered functionally graded alumina ceramic composites

Drozdova, Maria; Ivanov, Roman; Rodriguez, Miguel Angel; **Hussainova, Irina** ECerS 2017 : 15th Conference & Exhibition of the European Ceramic Society, July 9–13, 2017, Budapest, Hungary : Book of abstracts 2017 / p. 227 <https://static.akcongress.com/downloads/ecers/ecers2017-abstract-book.pdf>

Mo(Si,Al)₂ by laser powder bed fusion of AlSi10Mg and combustion synthesized MoSi₂

Minasyan, Tatevik; Ivanov, Roman; Toyserkani, Ehsan; **Hussainova, Irina** Materials letters 2022 / art. 131041 <https://doi.org/10.1016/j.matlet.2021.131041> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Novel alumina-nanocarbon hybrids

Hussainova, Irina; Anoshkin, Ilya; **Ivanov, Roman;** Kübarsepp, Jakob 38th International Conference & Exposition on Advanced Ceramics and Composites : abstract book : January 26-31, 2014, Daytona Beach, Florida 2014 / p. 117

On the potential of Transparent Rare-Earth-Free ZnAl₂O₄ Ceramics targeted at the UV-C to UV-B emission

Rojas Hernandez, Rocio Estefania; Rubio-Marcos, Fernando; Romet, Ivo; Feldbach, Eduard; Buryi, Maksym; John, David; **Ivanov, Roman; Hussainova, Irina;** Fernandez, José F.; Nagirnyi, Vitali Applied materials today 2024 / ar. 102230, 14 p. : ill <https://doi.org/10.1016/j.apmt.2024.102230> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Production of metal–ceramic lattice structures by selective laser melting and carburizing or nitriding

Holovenko, Yaroslav; Kollo, Lauri; Jõelet, Marek; Ivanov, Roman; Soloviova, Tetiana; **Veinthal, Renno** Proceedings of the Estonian Academy of Sciences 2019 / p. 131–139 : ill <https://doi.org/10.3176/proc.2019.2.02> http://www.kirj.ee/public/proceedings_pdf/2019/issue_2/proc-2019-2-131-139.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Quantifying graphitic edge exposure in graphene-based materials and its role in oxygen reduction reactions

Stamatin, Serban; **Hussainova, Irina; Ivanov, Roman;** Colavita, Paula E. ASC catalysis 2016 / p. 5215-5221 : ill <https://doi.org/10.1021/acscatal.6b00945> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Rapid and scalable combustion synthesis of (Mo₂/3Y₁/3)2AlC i-MAX as the precursor for vacancy-ordered MXene

Saffarshamshirgar, Ali; **Ivanov, Roman; Aydinyan, Sofiya;** Ghosh, Sohan; Chabanais, Florian; Ronchi, Rodrigo M.; Halim, Joseph; Elskova, Anna; Qin, Leiqiang; Nazaretyan, Khachik; **Hussainova, Irina** Journal of Material Science and Technology 2026 / p. 157-169 <https://doi.org/10.1016/j.jmst.2025.09.014>

Selective laser melting of TiB₂-Ti composite with high content of ceramic phase

Liu, Le; Minasyan, Tatevik; Ivanov, Roman; Aydinyan, Sofiya; Hussainova, Irina Ceramics international 2020 / p. 21128-21135 <https://doi.org/10.1016/j.ceramint.2020.05.189> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Spark plasma sintering of layered γ-Al₂O₃/graphene reinforced nanocomposites

Saffarshamshirgar, Ali; Ivanov, Roman; Hussainova, Irina Proceedings of the Estonian Academy of Sciences 2019 / p. 140–144 : ill <https://doi.org/10.3176/proc.2019.2.04> http://www.kirj.ee/public/proceedings_pdf/2019/issue_2/proc-2019-2-140-144.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Thermal transport and thermoelectric effect in composites of alumina and graphene-augmented alumina nanofibers

Saffarshamshirgar, Ali; Belmonte, Manuel; Tewari, Girish C.; **Rojas Hernandez, Rocio Estefania;** Seitsonen, Jani; **Ivanov, Roman;** Karppinen, Maarit; Miranzo, Pilar; **Hussainova, Irina** Materials 2021 / art. 2242 <https://doi.org/10.3390/ma14092242> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

3D alumina-graphene hybrid nanofibers as a binder-free cathode for rechargeable Li/S batteries

Taleb, Masoud; Ivanov, Roman; Hussainova, Irina Modern Materials and Manufacturing 2019 : 12th International DAAAM Baltic Conference and 27th International Baltic Conference BALTMATRIB 2019. Selected, peer reviewed papers from the conference Modern Materials and Manufacturing 2019 (MMM 2019), April 24-26, 2019, Tallinn, Estonia 2019 / p. 191-196 : ill <https://www.scientific.net/KEM.799.191> https://www.ester.ee/record=b5235278*est <https://doi.org/10.4028/www.scientific.net/KEM.799.191> [Conference proceeding at Scopus](#) [Article at Scopus](#)

3D printing of plain and gradient cermets with efficient use of raw materials

Antonov, Maksim; Ivanov, Roman; Holovenko, Yaroslav; Goljandin, Dmitri; Rahmani Ahranjani, Ramin; Kollo, Lauri; Hussainova, Irina Modern Materials and Manufacturing 2019 : 12th International DAAAM Baltic Conference and 27th International Baltic Conference BALTMATTRIB 2019. Selected, peer reviewed papers from the conference Modern Materials and Manufacturing 2019 (MMM 2019), April 24-26, 2019, Tallinn, Estonia 2019 / p. 239-245 : ill <https://doi.org/10.4028/www.scientific.net/KEM.799.239> https://www.ester.ee/record=b5235278*est [Conference proceeding at Scopus](#) [Article at Scopus](#)

3D printing of plain and gradient cermets with efficient use of raw materials

Antonov, Maksim; Ivanov, Roman; Holovenko, Yaroslav; Goljandin, Dmitri; Rahmani Ahranjani, Ramin; Kollo, Lauri; Hussainova, Irina Cermets : aggregated book 2023 / p. 83–90 <https://doi.org/10.4028/b-j9Oly>

Tunneling-percolation behavior of graphene-encapsulated whiskers as electroconductive fillers for ceramics

Hussainova, Irina; Ivanov, Roman; Kale, Sudhir S.; Jasiuk, Iwona Short fibre reinforced cementitious composites and ceramics 2019 / p. 131-139 https://doi.org/10.1007/978-3-030-00868-0_9 [Article collection metrics at Scopus](#) [Article at Scopus](#)

Ultra-sensitive voltammetric simultaneous determination of dopamine, uric acid and ascorbic acid based on a graphene-coated alumina electrode

Taleb, Masoud; Ivanov, Roman; Bereznev, Sergei; Kazemi, Sayed Habib; Hussainova, Irina Microchimica acta 2017 / p. 4603-4610 : ill <https://doi.org/10.1007/s00604-017-2510-y> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Ultra-wideband integrated graphene-based absorbers for terahertz waveguide systems

Campion, James; Xenidis, Nikolaos; Smirnov, Serguei; **Ivanov, Roman**; Oberhammer, Joachim; **Hussainova, Irina**; **Lioubtchenko, Dmitri** Advanced Electronic Materials 2022 / art. 2200106 <https://doi.org/10.1002/aelm.202200106> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Versatile graphene-alumina nanofibers for microwave absorption and EMI shielding

Saffar Shamshirgar, Ali; Alvarez, Maria Fernandez; Del Campo, Adolfo; Fernandez, Jose Francisco; Rojas Hernandez, Rocio Estefania; Ivanov, Roman; Rosen, Johanna; **Hussainova, Irina** Carbon 2023 / art. 118057 <https://doi.org/10.1016/j.carbon.2023.118057> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)