

Assessment of 3D printed steels and composites intended for wear applications in abrasive, dry or slurry erosive conditions

Kumar, Rahul, 1993-; Antonov, Maksim; Beste, U.; Goljandin, Dmitri International journal of refractory metals and hard materials 2020 / art. 105126, 9 p. : ill <https://doi.org/10.1016/j.ijrmhm.2019.105126> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Bioinspired and multifunctional tribological materials for sliding, erosive, machining, and energy-absorbing conditions : A review

Kumar, Rahul, 1993-; Rezapourianghahfarokhi, Mansoureh; Rahmani Ahranjani, Ramin; Maurya, Himanshu Singh; Kamboj, Nikhil Kumar; Hussainova, Irina Biomimetics 2024 / art. 209 <https://doi.org/10.3390/biomimetics9040209> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development of solid lubricated composites for high-temperature tribological applications = Tahkmäärdega komposiidide väljatöötamine kõrgtemperatuurseteks triborakendusteks

Kumar, Rahul, 1993- 2022 <https://doi.org/10.23658/taltech.75/2022> <https://digikogu.taltech.ee/et/Item/b117812c-4248-4542-ba39-fcbfe5349f4e> https://www.eester.ee/record=b5528171*est

EBSI investigation of microstructure and microtexture evolution on additively manufactured TiC-Fe based cermets—Influence of multiple laser scanning

Maurya, Himanshu Singh; Vikram, R. J.; Kumar, Rahul, 1993-; Rahmani Ahranjani, Ramin; Juhani, Kristjan; Sergejev, Fjodor; Prashanth, Konda Gokuldoss Micron 2024 / art. 103613 <https://doi.org/10.1016/j.micron.2024.103613> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of cBN content and additives on sliding and surface fatigue wear of spark plasma sintered Al₂O₃-cBN composites

Kumar, Rahul, 1993-; Antonov, Maksim; Klimczyk, Piotr; Mikli, Valdek; Gomom, Dmitri Wear 2022 / art. 204250 <https://doi.org/10.1016/j.wear.2022.204250> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of graphene nanoplatelet content on mechanical and elevated-temperature tribological performance of self-lubricating ZE10 magnesium alloy nanocomposites

Kandemir, Sinan; Yöyler, Sibel; Kumar, Rahul, 1993-; Antonov, Maksim; Dieringa, Hajo Lubricants 2024 / art. 52 <https://doi.org/10.3390/lubricants12020052> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of thermal shock treatment parameters on the efficiency of WC-Co cermet recycling

Kariminejad, Arash; Antonov, Maksim; Kumar, Rahul, 1993-; Goljandin, Dmitri; Klimczyk, Piotr; Viljus, Mart AIP conference proceedings 2024 / art. 040013 <https://doi.org/10.1063/5.0189330> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Effect of unit cell rotation on mechanical performance of selective laser melted Gyroid structures for bone tissue engineering

Rezapourianghahfarokhi, Mansoureh; Kumar, Rahul, 1993-; Hussainova, Irina Progress in engineering science 2024 / art. 100011 <https://doi.org/10.1016/j.pes.2024.100011>

Erosive wear resistance of nature-inspired flexible materials

Kumar, Rahul, 1993-; Antonov, Maksim; Holovenko, Yaroslav; Surženkov, Andrei Tribology letters 2020 / art. 51, 8 p. : ill <https://doi.org/10.1007/s11249-020-01296-8> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Fabrication of localized diamond-filled copper structures via selective laser melting and spark plasma sintering

Rahmani Ahranjani, Ramin; Karimi, Javad; Kamboj, Nikhil; Kumar, Rahul, 1993-; Brojan, Miha; Tchórz, Adam; Skrabalak, Grzegorz; Lopes, Sergio Ivan Diamond and related materials 2023 / art. 109916 <https://doi.org/10.1016/j.diamond.2023.109916> [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>

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](#)

Influence of strong carbide-forming elements (Nb and Ta) on the development of the green (Ti, Me)(C,N)-high chromium Fe-based cermets

Maurya, Himanshu Singh; Juhani, Kristjan; Tarraste, Marek; Viljus, Mart; Kumar, Rahul, 1993-; Hussain, Abrar; Sergejev,

Fjodor; Kübarsepp, Jakob Vacuum 2024 / art. 113723, 12 p <https://doi.org/10.1016/j.vacuum.2024.113723> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Microstructural investigation of ni-based high temperature self-lubricating laser claddings containing sulfides of nickel, copper or bismuth

Kumar, Rahul, 1993-; Torres, Hector; Rodríguez Ripoll, Manel; **Antonov, Maksim; Hussainova, Irina** Graduate School of Functional Materials and Technology (GSFMT) Scientific Conference : abstracts 2022 / 31 I. [Graduate School of Functional Materials and Technology \(GSFMT\) Scientific Conference 2022](#)

Microstructure and high temperature tribological behaviour of self-lubricating Ti-TiBx composite doped with Ni-Bi

Kumar, Rahul, 1993-; Torres, Hector; **Aydinyan, Sofiya; Antonov, Maksim;** Varga, Markus; Rodríguez Ripoll, Manel; **Hussainova, Irina** Surface and coatings technology 2022 / art. 128827 <https://doi.org/10.1016/j.surfcoat.2022.128827> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A novel real-time parametric tracking approach for robust microwave filter tuning

Sekhri, Even; Tamre, Mart; Kapoor, Rajiv; **Kumar, Rahul, 1993-** 2023 IEEE International Conference on Artificial Intelligence, Blockchain, and Internet of Things (AIBThings) 2023 / 5 p. : ill <https://doi.org/10.1109/AIBThings58340.2023.10292473>

Performance of Al2O3-cBN materials and the perspective of using hyperspectral imaging during cutting tests

Antonov, Maksim; Zahavi, Ali; Kumar, Rahul, 1993-; Tamre, Mart; Klimczyk, Piotr Proceedings of the Estonian Academy of Sciences 2021 / p. 524-532 : ill <https://doi.org/10.3176/proc.2021.4.21> [Journal Metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Performance of Al2O3-cBN materials and the perspective of using hyperspectral imaging during cutting tests

Antonov, Maksim; Zahavi, Ali; Kumar, Rahul, 1993-; Tamre, Mart; Klimczyk, Piotr IOP conference series : materials science and engineering 2021 / art. 012029, 5 p. : ill <https://doi.org/10.1088/1757-899X/1140/1/012029>

Performance of polyimide and PTFE based composites under sliding, erosive and high stress abrasive conditions

Kumar, Rahul, 1993-; Malaval, Bastien; **Antonov, Maksim;** Zhaoc, Gai Tribology international 2020 / art. 106282 <https://doi.org/10.1016/j.triboint.2020.106282> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Progress in sustainable recycling and circular economy of tungsten carbide hard metal scraps for industry 5.0 and onwards

Kumar, Rahul, 1993-; Kariminejad, Arash; Antonov, Maksim; Goljandin, Dmitri; Klimczyk, Piotr; **Hussainova, Irina** Sustainability 2023 / art. 12249 <https://doi.org/10.3390/su151612249> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Recycled wc powder for manufacturing of duplex interpenetrating tool materials for dry machining

Kariminejad, Arash; Antonov, Maksim; Hussainova, Irina; Goljandin, Dmitri; Kumar, Rahul, 1993-; Klimczyk, Piotr GSFMT Scientific Conference 2023 : Tartu, 23-24 May, 2023 : abstracts 2023 / 1 p <https://fmtdk.ut.ee/programm-2023/>

Reliability assessment of cutting tool materials using surface fatigue device

Kumar, Rahul, 1993-; Antonov, Maksim GSFMT Scientific Conference 2020 : Tallinn, February 4-5, 2020 : abstracts 2020 / p. 48 <http://fmtdk.ut.ee/wp-content/uploads/2020/01/GSFMT2020.pdf>

Self-lubricating materials for extreme temperature tribo-applications

Kumar, Rahul, 1993-; Antonov, Maksim Materials today: proceedings 2021 / p. 4583-4589 <https://doi.org/10.1016/j.matpr.2020.10.824> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Sliding Wear and Debris Evolution in LPBFed Ceramic-Reinforced Steel Composites Under Variable Loads and Temperatures

Maurya, Himanshu Singh; Kumar, Rahul, 1993-; Subramaniam, Anand Kumar; **Tarraste, Marek; Hussain, Abrar;** Rahmani Ahranjani, Ramin; **Juhani, Kristjan; Sergejev, Fjodor; Prashanth, Konda Gokuldoss** Materials Chemistry and Physics 2025 / art. 131195 <https://doi.org/10.1016/j.matchemphys.2025.131195>

Sliding wear performance of in-situ spark plasma sintered Ti-TiBw composites at temperatures up to 900 °C

Kumar, Rahul, 1993-; Antonov, Maksim; Liu, Lei; Hussainova, Irina Wear 2021 / art. 203663, 9 p.: ill <https://doi.org/10.1016/j.wear.2021.203663> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Solid lubrication at high-temperatures - a review

Kumar, Rahul, 1993-; Hussainova, Irina; Rahmani Ahranjani, Ramin; Antonov, Maksim Materials 2022 / art. 1695 <https://doi.org/10.3390/ma15051695> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Structural analysis of selective laser melted copper-tin alloy

Rahmani Ahranjani, Ramin; Resende, Pedro R.; Couto, Ruben; Lopes, Sérgio Ivan; Kumar, Rahul, 1993-; **Maurya, Himanshu Singh;** Karimi, Javad; Afonso, Alexandre M.; **Hussain, Abrar;** Abrantes, Joao C. C. Journal of alloys and metallurgical systems 2024

/ art. 100097 <https://doi.org/10.1016/j.jalmes.2024.100097> [Journal metrics at Scopus](#) [Article at Scopus](#)

Superhard CBN-AL2O3 composites for cutting tool applications

Kumar, Rahul, 1993-; Antonov, Maksim Tartu Ülikooli ASTRA projekt PER ASPERA : Funktsionaalsed materjalid ja tehnoloogiad : [4.-5. veebr. 2019, Tartu : teesid] 2019 / 1 p <http://fmdk.ut.ee/teesid-2019/>

Synergistic effect of Ag and MoS2 on high-temperature tribology of self-lubricating NiCrBSi composite coatings by laser metal deposition

Kumar, Rahul, 1993-; Antonov, Maksim; Varga, Markus; **Hussainova, Irina;** Rodríguez Ripoll, Manel *Wear* 2023 / art. 205114 <https://doi.org/10.1016/j.wear.2023.205114> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Temperature-induced wear micro-mechanism transition in additively deposited nickel alloys with different solid lubricants

Kumar, Rahul, 1993-; Hussainova, Irina; Antonov, Maksim; Maurya, Himanshu Singh; Rodríguez Ripoll, Manel *Wear* 2024 / art. 205452 <https://doi.org/10.1016/j.wear.2024.205452> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Tribological and circular economy aspects of polypropylene/cotton fibre hybrid composite

Hussain, Abrar; Podgurski, Vitali; Goljandin, Dmitri; Antonov, Maksim; Kumar, Rahul, 1993-; Kamboj, Nikhil Kumar; Rahmani Ahranjani, Ramin; Viljus, Mart; Ahmad, Tahir; **Krumme, Andres; Krasnou, Illia** *Proceedings of the Estonian Academy of Sciences* 2022 / p. 186-193 : ill <https://doi.org/10.3176/proc.2022.2.03> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Tribological behavior of Ni-based self-lubricating claddings containing sulfide of nickel, copper, or bismuth at temperatures up to 600 °C

Kumar, Rahul, 1993-; Torres, Hector; **Aydinyan, Sofiya; Antonov, Maksim;** Varga, Markus; **Hussainova, Irina;** Rodríguez Ripoll, Manel *Surface and coatings technology* 2023 / art. 129270, 14 p. : ill <https://doi.org/10.1016/j.surfcoat.2023.129270> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Wear mechanisms of PM-HIP tool steels under low and high-stress abrasion : role of carbide type and content

Kumar, Rahul, 1993-; Antonov, Maksim; Berglund, Tomas; **Pampori, Tabeen Halawat;** Maurya, Himanshu Singh; **Viljus, Mart** *Journal of materials research and technology* 2025 / p. 7016-7025 <https://doi.org/10.1016/j.jmrt.2025.04.317>