

Additive manufacturing of cryogenic chemically complex alloys with sponge bone-like reticular nanoscale superstructure
Xie, Kaiqiang; Ma, Pan; Fang, Yacheng; Yang, Hong; Wan, Shiguang; Wu, Zhibin; **Shi, Jinqiang**; **Prashanth, Konda Gokuldoss**; Gargarella, Piter; Zhang, Lunyong Composites Part B : Engineering 2025 / art. 112786
<https://doi.org/10.1016/j.compositesb.2025.112786>

Application issues of additive manufacturing in plaster mold casting of metals
Pohlak, Meelis; **Sergejev, Fjodor**; **Tähemaa, Toivo**; **Saarna, Mart**; **Viljus, Mart**; **Hermaste, Aigar** Proceedings of the Estonian Academy of Sciences 2025 / p. 181-185 <https://doi.org/10.3176/proc.2025.2.18>

AR/VR Digital Twin for simulation and data collection of robotic environments
Martins, João G.; **Nutonen, Karle**; Costa, Paulo; **Kuts, Vladimir**; **Otto, Tauno**; Sousa, Armando; Petry, Marcelo R. 2025 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC) 2025 / 6 p
<https://doi.org/10.1109/ICARSC65809.2025.10970158>

Autonomous vehicle for industry 5.0 : Digital twin for system safety validation
Sell, Raivo; **Malayjerdi, Mohsen**; Malayjerdi, Ehsan; **Bellone, Mauro**; **Pikner, Heiko** Proceedings of the 11th International Conference on Vehicle Technology and Intelligent Transport Systems VEHITS ; Vol. 1 2025 / p. 660-667
<https://doi.org/10.5220/0013476600003941>

Binder jetting 3D printing of green TiC-FeCr based cermets- Effect of sintering temperature and systematic comparison study with Laser powder bed fusion fabricated parts
Maurya, Himanshu Singh; Marczyk, J.; **Juhani, Kristjan**; **Sergejev, Fjodor**; Kumar, R.; **Hussain, Abrar**; Akhtar, F.; Hebda, M.; **Prashanth, Konda Gokuldoss** Materials Today Advances 2025 / art. 100562 <https://doi.org/10.1016/j.mtadv.2025.100562>

Collaboration Between Industrial, Collaborative, Humanoid Robots and Humans
Kekšin, Vjatšeslav; **Ponomar, Sergei**; **Sarkans, Martinš**; **Kuts, Vladimir**; **Pavlov, Sergei** Journal of Machine Engineering 2025 / p. 100-110 : ill <https://doi.org/10.36897/jme/203790>

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>

Development of a sustainability-oriented KPI selection model for manufacturing processes
Karjust, Kristo; **Mehrpavar, Marmar**; **Kaganski, Sergei**; **Raamets, Tõnis** Sustainability 2025 / art. 6374
<https://doi.org/10.3390/su17146374>

Development of experimental set-up for the investigation of photoelectric response of the pyroelectric crystal to short pulses of the Hg(Xe) lamp
Podgurski, Vitali; **Land, Raul**; **Bogatov, Andrei**; Vlasov, A.; Nagorny, A.; Tiik, K. Journal of optoelectronics and advanced materials 2024 / p. 243 - 245 <https://joam.inoe.ro/articles/development-of-experimental-set-up-for-the-investigation-of-photoelectric-response-of-the-pyroelectric-crystal-to-short-pulses-of-the-hgxe-lamp/fulltext> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development, implementation and field trial of 5G integrated GNSS-RTK positioning in cross-border settings
Elgarhy, Osama; **Rohtla, Margus**; **Ait, Indur**; **Roosipuu, Priit**; **Kõrbe Kaare, Kati**; **Sadam, Arvi**; **Kallaspoolik, Toomas**; **Alam, Muhammad Mahtab** 2024 IEEE Future Networks World Forum (FNWF) 2025 / p. 791-796
<https://doi.org/10.1109/FNWF63303.2024.11028789>

Dynamics of axially graded nanobeams with follower force effect
Arda, Mustafa; **Mehrpavar, Marmar**; **Karjust, Kristo** International Conference of Numerical Analysis and Applied Mathematics ICNAAM2022 : Heraklion, Freece, 19-25 September 2022 2024 / art. 230005 <https://pubs.aip.org/aip/acp/article-abstract/3094/1/230005/3297087/Dynamics-of-axially-graded-nanobeams-with-follower> <https://doi.org/10.1063/5.0210131> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Effect of laser surface texturing and fabrication methods on tribological properties of Ti6Al4V/HAp biocomposites
Sadlik, Julia; **Kosinska, Edyta**; **Tomala, Agnieszka**; **Bankosz, Magdalena**; **Polajnar, Marko**; **Kumar, Rahul**; **Kalin, Mitjan**; **Kravanja, Gaia**; **Hribar, Luka**; **Hussainova, Irina** Materials 2025 / art.2468 <https://doi.org/10.3390/ma18112468>

Effect of milling activation of dry components on properties of foamed cement mortar in a two-stage manufacturing process
Baroninš, Janis; **Shishkin, Andrei**; **Lusis, Vitalijs**; **Giosue, Chiara**; **Goljandin, Dmitri**; **Novakova, Iveta**; **Kekez, Sofija**; **Korjakins, Aleksandrs**; **Gorelikovs, Dmitrijs**; **Gavrilovs, Pavels** Case studies in construction materials 2025 / art. e04465
<https://doi.org/10.1016/j.cscm.2025.e04465>

Effect of pulsed deuterium plasma irradiation on dual-phase tungsten medium-entropy alloys
Laas, Tõnu; **Tõkke, Siim**; **Paju-Hamburg, Jana**; **Tarraste, Marek**; **Mikli, Valdek**; **Antonov, Maksim**; **Priimets, Jaanis**; **Czarkowski, Piotr**; **Miklaszewski, Ryszard**; **Paduch, Marian** Fusion engineering and design 2025 / art. 115229

<https://doi.org/10.1016/j.fusengdes.2025.115229>

Effect of silica precursor on the synthesis of Zn₂SiO₄-based material

Rojas Hernandez, Rocio Estefania; Hussainova, Irina; Necib, Jallouli Proceedings of the Estonian Academy of Sciences 2025 / p. 217-221 <https://doi.org/10.3176/proc.2025.2.24>

Enhanced Crack Detection in Composite Plates : Integrating Haar Wavelet Transform with Convolutional Neural Networks

Mehrpavar, Marmar; Majak, Jüri; Karjust, Kristo 6th International Conference on Multidisciplinary Design Optimization and Applications (MDOA 2024) 2025 / art. 01008 https://www.e3s-conferences.org/articles/e3sconf/abs/2025/31/e3sconf_mdoa2025_01008/e3sconf_mdoa2025_01008.html
<https://doi.org/10.1051/e3sconf/202563101008>

Erosive and impact-abrasive wear of hardmetals with Fe-based binders

Tarraste, Marek; Antonov, Maksim; Kolnes, Märt; Viljus, Mart; Ormus, Andres-Hardi Journal of the Japan Society of Powder and Powder Metallurgy 2025 / p. S1437-S1444 <https://doi.org/10.2497/jjspm.16F-T15-05>

Erosive wear of spark plasma sintered Al₂O₃ - cBN ceramic composites

Kariminejad, Arash; Kumar, Rahul; Antonov, Maksim; Hussainova, Irina; Klimczyk, Piotr Diamond and Related Materials 2025 / art. 112328 <https://doi.org/10.1016/j.diamond.2025.112328>

Evaluation of fatigue crack growth rates and fracture toughness in a selective laser-melted Ti-5.6Al-3.8V alloy with optimized microstructure after heat treatment

He, Yuqi; Zhao, Kexin; Zhang, Ying; Prashanth, Konda Gokuldoss; Ye, Zimeng; Yu, Zerong; Zhang, Fengying Materials science and engineering : A 2025 / art. 147822 <https://doi.org/10.1016/j.msea.2025.147822>

Exploitability of Maritime Fleet-Based 5G Network Extension

Pilvik, Riivo; Jaurus, Tanel; Sadam, Arvi; Nõmmela, Kaidi; Kõrbe Kaare, Kati; Scholliers, Johan Electronics 2025 / art. 2210 <https://doi.org/10.3390/electronics14112210>

Exploring microstructural properties, phase transformations, and wettability in high-chromium content iron-bonded Ti(C,N)-based cermet

Pampori, Tabeen Halawat; Kolnes, Märt; Juhani, Kristjan; Tarraste, Marek; Maurya, Himanshu Singh; Kübarsepp, Jakob Journal of the Japan Society of Powder and Powder Metallurgy 2025 / p. S1533-S1540 <https://doi.org/10.2497/jjspm.16P-T14-06>

Forming ability of the WC-based ceramic metal composites with different Fe-based binders by unique laser beam modulation

Maurya, Himanshu Singh; Juhani, Kristjan; Sergejev, Fjodor; Kumar Yadav, Mayank; Hussain, Abrar; Prashanth, Konda Gokuldoss Next Materials 2025 / art. 100524 <https://doi.org/10.1016/j.nxmte.2025.100524>

From scrap to product : the effect of recycled tungsten carbide and alumina content on the mechanical properties of oxide-carbide duplex ceramic composite

Kariminejad, Arash; Klimczyk, Piotr; Antonov, Maksim; Hussainova, Irina Proceedings of the Estonian Academy of Sciences 2025 / p. 192-197 <https://doi.org/10.3176/proc.2025.2.20>

Generating curricula: A human-centred perspective in the era of artificial intelligence

Rüütman, Tiia; Läänemets, Urve Science and Technology Education : Expectations and Experiences : Proceedings of the 6th International Baltic Symposium on Science and Technology Education (BalticSTE2025) 2025 / p. 180-196
<https://doi.org/10.33225/BalticSTE/2025.180>

Glass-box Automated Driving : Insights and Future Trends

Bellone, Mauro; Sell, Raivo; Soe, Ralf-Martin Proceedings of the 17th International Conference on Agents and Artificial Intelligence - (Volume 1) 2025 / p. 880-885 <https://doi.org/10.5220/0013384300003890>

Human-robot interaction : a conceptual framework for safety/risk analysis

Matsulevitš, Johannes; Majak, Jüri; Eerme, Martin; Sarkans, Martinš; Dunajeva, Olga; Kristjuhan-Ling, Kadri; Raamets, Tõnis; Kekšin, Vjatšeslav Proceedings of the Estonian Academy of Sciences 2025 / p. 137-142
<https://doi.org/10.3176/proc.2025.2.09>

Implementing an AI-based digital twin analysis system for real-time decision support in a custom-made sportswear SME

Raamets, Tõnis; Karjust, Kristo; Majak, Jüri; Hermaste, Aigar Applied sciences 2025 / art. 7952
<https://doi.org/10.3390/app15147952>

In situ Al₃BC/Al composite fabricated via solid-solid reaction: An investigation on microstructure and mechanical behavior

Maity, Tapabrata; Prakash, Aditya; Roy, Debdas; Prashanth, Konda Gokuldoss Applied sciences 2025 / art. 5189
<https://doi.org/10.3390/app15095189>

Inseneriõppe väljakutsetest ja pingutuse väärtusest: rahvusvahelised praktikad

Rüütman, Tiia Mente et Manu 2025 / lk. 44-47 <https://taltech.ee/uudised/inseneriõppe-valjakutsetest-ja-pingutuse-vaartusest-rahvusvahelised-praktikad> https://www.ester.ee/record=b1242496*est

Integrating Digital Twin Software Solutions with Collaborative Industrial Systems : A Comprehensive Review for Operational Efficiency

Guerra-Zubiaga, David; Aksu, Murat; Richards, Gershon; **Kuts, Vladimir** Applied Sciences 2025 / art. 7049 <https://doi.org/10.3390/app15137049>

Interpenetrating composites : A nomenclature dilemma

Prashanth, Konda Gokuldoss Materials 2025 / art. 273 <https://doi.org/10.3390/ma18020273>

An Investigation into the Thermomechanical Processing and Dynamic Recrystallization Mechanisms of High-Magnesium Aluminum Alloys

Ye, Zili; Zhou, Zixiao; Ye, Zhaolin; Wang, Zhi; Zhao, Qizhong; **Prashanth, Konda Gokuldoss** Materials 2025 / art. 2734 <https://doi.org/10.3390/ma18122734>

Irradiation-induced atomic migration and its effect on the surface and mechanical properties of laser additive manufactured MWCNTs/Al–Mg–Sc–Zr composites

Xi, Lixia; Zhang, Yuting; Geng, Xiaofeng; Gu, Dongdong; Shi, Keyu; Ramasamy, Parthiban; **Prashanth, Konda Gokuldoss; Eckert, Jürgen** Journal of materials research and technology 2025 / p. 4043-4054 <https://doi.org/10.1016/j.jmrt.2025.02.109>

Laser powder bed fusion of WC-Ni cermets : microstructural, phase and mechanical studies

Singh, Shalini; Meszaros, Kimberley; Narayanan, Jinoop Arackal; Dehgahi, Shirin; **Prashanth, Konda Gokuldoss; Qureshi, Ahmed Jawad Tungsten** 2025 <https://doi.org/10.1007/s42864-025-00329-w>

Lean in universities: assessing practicality across university functions

Kristjuhan-Ling, Kadri; Mahmood, Kashif Proceedings of the Estonian Academy of Sciences 2025 / p. 160-164 <https://doi.org/10.3176/proc.2025.2.14> <http://https://kirj.ee/proceedings-of-the-estonian-academy-of-sciences-publications/?filter%5Byear%5D=2025&filter%5Bissue%5D=1821&filter%5Bpublication%5D=16483&v=a57b8491d1d8>

Load and temperature dependent sliding wear performance of Binder Jet 3D printed stainless-steel bonded cermet

Maurya, Himanshu Singh; Akhtar, F.; Prashanth, Konda Gokuldoss Journal of materials research and technology 2025 / p. 1199-1212 <https://doi.org/10.1016/j.jmrt.2025.06.095>

Mechanical analysis of multi-surface TPMS lattices for bone applications

Hussainova, I.; Rezapourian, M. Proceedings of the Estonian Academy of Sciences 2025 / p. 222-227 <https://doi.org/10.3176/proc.2025.2.25>

Metallic multimaterials fabricated by combining additive manufacturing and powder metallurgy

Yadav, Mayank Kumar; Shukla, Riddhi Hirenkumar; Xi, Lixia; Wang, Zhi; Prashanth, Konda Gokuldoss Journal of composites science 2025 / art. 80 <https://doi.org/10.3390/jcs9020080>

Microstructural Characterization and Hydrothermal Ageing Resistance of Rice Husk Silica-Doped Alumina Toughened Zirconia Biocomposite

Gupta, Ashutosh; Pandey, Vaibhav; Singh, Satyendra Kumar; **Yadav, Mayank Kumar; Majhi, Manas Ranjan** Silicon 2025 / 11 p <https://doi.org/10.1007/s12633-025-03353-0>

Microstructure and metastable phase formation of Mo-added Ti6Al4V alloys under laser micro-alloying

Ye, Zimeng; Yu, Zerong; Zhao, Kexin; **Prashanth, Konda Gokuldoss; Sun, Zhiping; Zeng, Dejun; Zhang, Hengxin; Liu, Sizhe; Zhang, Fengying** Journal of materials research and technology 2025 / p. 785-795 <https://doi.org/10.1016/j.jmrt.2025.06.072>

Multi-objective machine learning optimization of cylindrical TPMS lattices for bone implants

Rezapourianghahfarokhi, Mansoureh; Cheloe Darabi, Ali; Khoshbin, Mohammadreza; **Hussainova, Irina** Biomimetics 2025 / art. 475 <http://doi.org/10.3390/biomimetics10070475>

A Novel Vision Transformer for Camera-LiDAR Fusion based Traffic Object Segmentation

Tahves, Toomas; Gu, Junyi; Bellone, Mauro; Sell, Raivo Proceedings of the 17th International Conference on Agents and Artificial Intelligence : Volume 2 2025 / p. 566-573 <https://doi.org/10.5220/0013239000003890>

Numerical modeling of fragment flight dynamics

Kivistik, Lenart; Mehrparvar, Marmar; Eerme, Martin; Dieves, Veiko; **Majak, Jüri** Proceedings of the Estonian Academy of Sciences 2025 / p. 120-125 <https://doi.org/10.3176/proc.2025.2.06>

An overview of smart workplace solutions and potential improvement areas

Kelpman, Karolin; Karjust, Kristo; Majak, Jüri Proceedings of the Estonian Academy of Sciences 2025 / p. 155-159
<https://doi.org/10.3176/proc.2025.2.13>

Overview of the development of cybersecurity in data transmission protocols used in industry

Ponomar, Sergei; Sarkans, Martinš Proceedings of the Estonian Academy of Sciences 2025 / 6, p. 143-148
<https://doi.org/10.3176/proc.2025.2.11>

Performance optimization of a high-speed permanent magnet synchronous motor drive system for formula electric vehicle application

Ibrahim, Mahmoud; Järg, Oskar; Seppago, Raigo; Rassõlkin, Anton Sensors 2025 / art. 3156 <https://doi.org/10.3390/s25103156>
<https://www.mdpi.com/1424-8220/25/10/3156>

Plasma-transferred arc-welded composite hardfacings with ZrB₂ and TiC reinforcements

Melakh, Liudmyla; Surzhenkov, Andrei; Juhani, Kristjan; Viljus, Mart; Traksmäa, Rainer; Vedel, Dmytro Proceedings of the Estonian Academy of Sciences 2025 / p. 165-169 <https://doi.org/10.3176/proc.2025.2.15>

Product Assurance in the Age of Artificial Intelligence

2025 <https://doi.org/10.4271/EPR2025011> <https://saemobilus.sae.org/reports/product-assurance-age-artificial-intelligence-epr2025011>

Response of stress relieving and solution annealing treatment on tensile properties and fracture toughness of additively manufactured stainless steel 316L

Kumar, Deepak; Arya, Abhinav; Dutta, Shubhendu Anupam; Jhavar, Suyog; Prashanth, Konda Gokuldoss; Suwas, Satyam Journal of Materials Engineering and Performance 2025 / art. 145021 <https://doi.org/10.1007/s11665-025-11334-y>

Situational awareness in autonomous shuttle buses

Kalda, Krister; Koskinen, Kari M.; Sarv, Lill; Sell, Raivo Proceedings of the Estonian Academy of Sciences 2025 / p. 212-216
<https://doi.org/10.3176/proc.2025.2.23> https://kirj.ee/wp-content/plugins/kirj/pub/proc-2-2025-212-216_20250519131011.pdf?v=a57b8491d1d8

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

Maurya, Himanshu Singh; Kumar, Rahul, 1993-; Subramaniyan, 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>

Synthesis of best practices in curriculum design for engineering educators' pedagogical training

Rüütmann, Tiia; Läänemets, Urve Futureproofing Engineering Education for Global Responsibility : Proceedings of the 27th International Conference on Interactive Collaborative Learning (ICL 2024) ; vol. 2 2025 / p. 288-299 https://doi.org/10.1007/978-3-031-85649-5_35

Testing platforms augmented with artificial intelligence and educational templates

Bondarenko, Tetiana; Rüütmann, Tiia; Kupriyanov, Oleksandr; Yahupov, Vasyi; Rostoka, Marina; Poliakov, Maksym Futureproofing Engineering Education for Global Responsibility : Proceedings of the 27th International Conference on Interactive Collaborative Learning (ICL 2024) ; vol. 1 2025 / p. 1305-1312 https://doi.org/10.1007/978-3-031-85652-5_47

Unusual deformation substructure and strain hardening in an additively manufactured CoCrFeMnNi high entropy alloy under high-velocity impact loading

Chen, Hongyu; Yang, Xiaofeng; Gu, Dongdong; Liu, Yang; Yang, Shengze; Chen, Xiyu; Kosiba, Konrad; Chen, Yufei; Du, Junhang; Prashanth, Konda Gokuldoss Journal of Material Science and Technology 2025 / p. 35-51 <https://doi.org/10.1016/j.jmst.2025.02.087>

Wear and corrosion resistance of a laser powder bed fused AZ91D magnesium matrix composite with TiC reinforcement

Xi, Lixia; Tian, Songmao; Zhang, Dong; Gu, Dongdong; Ramasamy, Parthiban; Prashanth, Konda Gokuldoss; Eckert, Jürgen Materials & Design 2025 / art. 114263 <https://doi.org/10.1016/j.matdes.2025.114263>

Virtual factory model development for AI-driven optimization in manufacturing

Raamets, Tõnis; Karjust, Kristo; Hermaste, Aigar; Kelpman, Karolin Proceedings of the Estonian Academy of Sciences 2025 / p. 228-233 <https://doi.org/10.3176/proc.2025.2.26>

A workflow for extended reality-based learning in engineering education

Kuts, Vladimir; Otto, Tauno; Boychuk, Rostyslav; Mahmood, Kashif; Pizzagalli, Simone Luca Proceedings of the Estonian Academy of Sciences 2025 / p. 103-108 <https://doi.org/10.3176/proc.2025.2.03>