Journal Publications

1. Sudharm Rathore, Avanish Kumar, Anurag Kumar, Kushal Mishra, Aparna Singh: *Prediction of sub-critical fatigue crack growth rate in a high-carbon tempered martensitic steel at varying R ratio: experimental investigation and machine learning based modelling*. International Journal of Fatigue (In Press). Read - Q1
2. Avanish Kumar, B. Blessto, Aparna Singh: *Development of a low-carbon carbide-free nanostructured bainitic steel with extremely high strength and toughness.* Materials Science and Engineering A 877 (2023) 145186. Read – Q1
3. Bhawesh Chhajed, B. Blessto, Avanish Kumar, Aparna Singh*: Effect of torsional deformation on crystallographic evolution of carbide-free nano-bainitic steels prepared at two different austempering temperatures.* Materialia 28 (2023) 101773. Read – Q1
4. Avanish Kumar, B. Blessto, Aparna Singh: *Effect of austempering temperature on high cycle fatigue behaviour in nanostructured bainitic steels.* Materials Science and Engineering A 846 (2022) 143296. Read – Q1
5. Avanish Kumar, Aparna Singh: *Mechanical properties of nanostructured bainitic steels*. Materialia 15 (2021) 101034. Read Q1
6. Avanish Kumar, Aparna Singh: *Deformation mechanisms in nanostructured bainitic steels under torsion*. Materials Science and Engineering A 770 (2020) 138528. Read Q1
7. Avanish Kumar, Aparna Singh: *Microstructural effects on the sub-critical fatigue crack growth in nano-bainite*. Materials Science and Engineering A 743 (2019) 464–471. Read Q1
8. Avanish Kumar, Kritika Singh, Aparna Singh: *Compositional design of high strength nanostructured bainite*. Materials Research Express 6(2) (2019) 026526. Read Q2
9. Avanish Kumar, Aparna Singh: *Toughness dependence of nano-bainite on phase fraction and morphology*. Materials Science and Engineering A 729 (2018) 439–443. Read Q1
10. Kritika Singh, Avanish Kumar, Aparna Singh: *Effect of prior austenite grain size on the morphology of nano-bainitic steels*. Metallurgical and Materials Transactions A 49(4) (2018) 1348-1354. Read Q1
11. Avanish Kumar, S K Pradhan, K Jayasankar, M Debata, R K Sharma, A Mandal: *Structural investigations of nanocrystalline Cu-Cr-Mo alloy prepared by high energy ball milling*. Journal of Electronic Materials - 46(2) (2017) 1339–1347. Read – Q3
12. Avanish Kumar, K. Jayasankar, M. Debata, A. Mandal: *Mechanical alloying and properties of immiscible Cu-20 wt.% Mo alloy*. Journal of Alloys and Compounds - 647 (2015) 1040-1047. Read – Q1

Conference Proceedings

1. Bhawesh Chhajed, Sudharm Rathore, Avanish Kumar, Aparna Singh: *Investigation of microstructural evolution in nano-structured bainite during Paris law regime of fatigue crack growth.* European Conference on Fracture 2024.
2. Avanish Kumar, Aparna Singh: *The role of microstructure on damage tolerance in nano-bainitic steels.* 1st Virtual European Conference on Fracture (VECF1), Structural Integrity Procedia, 28 (2020) 93–100. Read
3. Avanish Kumar, Aparna Singh: *Improvement of strength-toughness combination in nanostructured bainite*. ECF22 - Loading and Environmental effects on Structural Integrity; Belgrade, Serbia, Structural Integrity Procedia, 13 (2018) 548–553. Read

4. Avanish Kumar, Aparna Singh: *Bainitic steels: Strength as a function of carbon concentration*. Asia Steel International Conference, 02/2018, Bhubaneswar, India.
5. Avanish Kumar, K. Jayasankar, M. Debata, A. Mandal: *Development of Cu-Mo alloy for high power microwave devices,* 26th AGM Materials Research Society of India (MRSI), Theme Symposium "Materials for Inclusive Development", 02/2015, Jaipur, India.

Patents

Avanish Kumar, Aparna Singh: *High strength and toughness low carbon nanostructured bainitic steel and preparation method thereof.* Granted. Indian Patent Number: 540248.