

The number of publications in high-rated international journals and national journals proves the scientific experience of the research staff and the quality of the work carried out at the Tribology Centre.

In 2021 alone, 8 publications were published:

1. Nicolas Molina, Magdalena Walczak, Marek Kalbarczyk, Diego Celentano: *Erosion under turbulent slurry flow: An inverse analysis for the determination of particle impact velocity and wear correlation by image processing*. *Wear*. 2021, vol. 474-475.
2. Remigiusz Michalczewski, Marek Kalbarczyk, Zbigniew Słomka, Edyta Osuch-Słomka, Maciej Łuszcz, Le Liu, Maksim Antonov, Irina Hussainova: *Sliding wear performance of AlCrN coating on TiB₂/Ti composites at high temperatures*. *Materials*. 2021, vol. 14, 6771.
3. Waldemar Tuszyński, Remigiusz Michalczewski, Edyta Osuch-Słomka, Andrzej Snarski-Adamski, Marek Kalbarczyk, Andrzej N. Wieczorek, Jakub Nędza: *Abrasive wear, scuffing, and rolling contact fatigue of DLC-coated 18CrNiMo7-6 steel lubricated by a pure and contaminated gear oil*. *Materials*. 2021, vol. 14, 7086.
4. Marek Grabowy, Kamil Wojteczko, Agnieszka Wojteczko, Grzegorz Wiązania, Maciej Łuszcz, Magdalena Ziąbka, Zbigniew Pędzich: *Alumina-toughened-zirconia with low wear rate in ball-on-flat tribological tests at temperatures to 500°C*. *Materials*. 2021, vol. 14, 7646.
5. Estefany Tovar Sifuentes, Oxana V. Kharissova, Demófilo Maldonado-Cortés, Laura Peña-Parás, Remigiusz Michalczewski, Boris I. Kharisov: *A comparison of tribological properties of nanolubricants containing carbon nanotube and additional additives*. *Materials Chemistry and Physics*. 2021, vol. 272, 124973.
6. Remigiusz Michalczewski, Marek Kalbarczyk, Zbigniew Słomka, Sylwia Sowa, Maciej Łuszcz, Edyta Osuch-Słomka, Demófilo Maldonado-Cortés, Le Liu, Maksim Antonov, Irina Hussainova: *The wear of PVD coated elements in oscillation motion at high temperature*. *Proceedings of the Estonian Academy of Sciences*. 2021, vol. 70-4, pp. 500-507.
7. Waldemar Tuszyński, Marian Szczerek, Jan Wulczyński, Andrzej Gospodarczyk, Remigiusz Michalczewski, Tomasz Samborski, Michał Gibała, Andrzej Wieczorek: *New test rig for measuring the friction torque of gearboxes in extreme thermal conditions*. *Tribologia*. 2021, No. 2, pp. 57-64.
8. Krzysztof Olejarczyk, Marek Kalbarczyk: *A geometrical surface texture study of cycloid drive discs after bench tests*. *Tribologia*. 2021, No. 3, pp. 27-33.

Almost all publications are the result of scientific and research cooperation of the Tribology Centre with domestic and foreign research institutions.