

Some classes of sintered antifriction materials that form the basis for the development of new materials are discussed. Metal- and nonmetal-based materials with high wear resistance, low friction coefficient, and maximum lifetime are described. They differ in composition, structure (microheterogeneous, macroheterogeneous, layered, fibrous), carrying capacity, and potential for operation under various loads, at sliding rates, and in various conditions (high and low temperatures, corrosive and aggressive media, i.e., in water, acids, alkalis, melted metals, burning-hot gases, with and without lubrication, under high vacuum), in different friction modes (light, medium, heavy, and extremely heavy). The above materials are intended for application in the aviation, motorcar, chemical, oil, metallurgical, transportation, nuclear, textile, and food industries, in cryogenic, rocket, missile, and turbine engineering. Sintered antifriction materials are developed at the Frantsevich Institute for Problems of Materials Science, in particular, under the guidance of I. M. Fedorchenko, a famous materials scientist and academician.