

The press service of the Belgorod State National Research University (NIU BelSU) reported that university scientists have developed a new heat-resistant alloy capable of maintaining strength at a temperature of up to 800 degrees Celsius.

The material consisting of six elements is characterized by high strength and plasticity, which makes it promising for use in aviation and the missile and space industry.

According to the developers, standard alloys often do not meet the requirements for strength and plasticity at high temperatures. As a solution, scientists have chosen an approach with high -entropy alloys - these are multicomponent systems, including five or more metals.

The new material was created on the basis of aluminum, titanium, vanadium, chromium, zirconium and niobium. To form a homogeneous structure, it was repeatedly melted in a vacuum. The tests confirmed that the alloy retains mechanical properties both at room temperature and when heated, noted in the press service.

The development surpassed well -known tight analogues, such as alloys based on molybdenum and tungsten, which, although they have high strength, but are inferior in plasticity and have excessive density.

The new alloy showed the strength of 1456 MPa at room temperature and 1192 MPa at 800 ° C. At the same time, the level of deformation without destruction reaches more than 50%, which is much higher than that of traditional aviation alloys.