

The press service of the Ministry of Education and Science of the Russian Federation reported that scientists of the Penza State University discovered an previously unknown type of waves arising in nonlinear materials under the influence of electromagnetic fields. This fundamental opening can find application in the creation of medical equipment and information transmission devices.

The peculiarity of the study is that the existing mathematical models could not describe a new phenomenon. Scientists had to develop a special calculation method for the analysis of two -parametric tasks. Based on these data, a computer program for modeling wave processes will be created at the university.

The head of the study Valery Martynova noted that until that moment, such hybrid waves in nonlinear environments were not known to science. The results will allow engineers to take into account complex physical effects when designing new devices.

The practical application of the discovery covers various areas – from fiber optics to laser medicine. Of particular interest are heterogeneous materials whose properties change under external influence.