

Dr. Mark Kreuzer and Prof. Romain Quidant give their view on recent advances on the use of metamaterials for biosensing.



NEWS & VIEWS

Dr. Mark Kreuzer and ICREA Prof. Romain Quidant review a paper on ultrasensitive detection and characterization of chiral biomolecules using planar metallic metamaterials, published in Nature Nanotechnology by researchers at the universities of Glasgow and Exeter led by Prof. Malcolm Kadowala.

In nature, the majority of molecules come in a particular right- or left-handed version, so-called enantiomers, but when synthesized in a lab, a random mixture of the two versions is obtained. Pharmaceutical companies are especially interested in the discrimination of left- and right-handed versions of artificially synthesized molecules, since these chiral properties affect the way drugs interact with the body, with one version having beneficial effects whereas the other may have dangerous side effects or no effect at all. The study reviewed demonstrates an improvement in sensitivity of six orders of magnitude in the discrimination of both versions.