

Plasmonic Chirality in Gold Nanorods

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The field of chirality has seen a strong rejuvenation due to the observation of nanoscale chirality in plasmonic nanoparticles. We present recent advances in the field of plasmonic chirality, including novel methods for the synthesis of optically active plasmonic nanomaterials. We focus in particular on chiral nanostructures formed using biological templates. After demonstration of the synthesis and mechanistic understanding of chirality at the nanoscale, the focus will be placed on suitable applications for such nanomaterials. While different applications such as circular polarizers, chiral sensing and catalysis have been proposed, we propose that plasmon-enhanced chiral signals have great potential for use in the detection and therapy of diseases. We therefore introduce recent developments in the biomedical use of chiral plasmonic responses, in relation with the important field of neurodegenerative diseases..

References

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