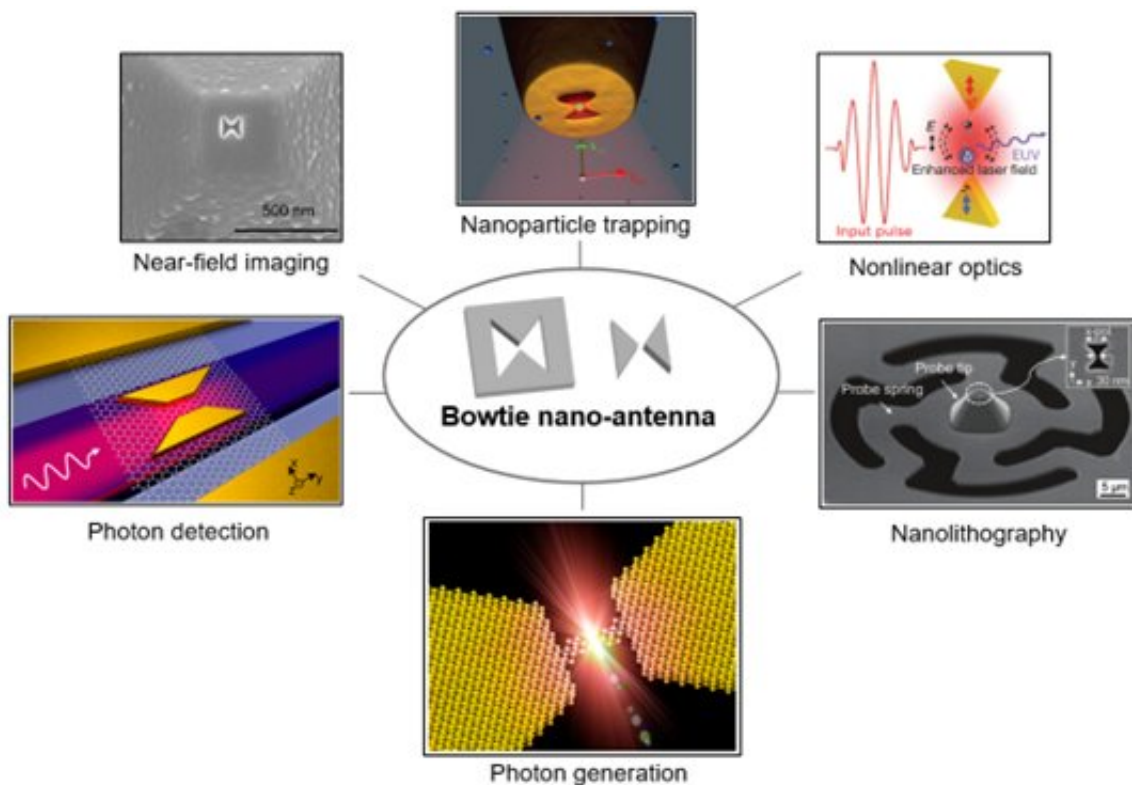


# Exploring the use of the nanoscale bowtie antenna under optical and electrical excitations

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Bowtie antenna and its applications. Credit: Compuscript Ltd

Optical nanoantennas capable of converting external electromagnetic fields into confined energy and vice versa play a very important role in optical field manipulation. Among them, the bowtie antenna has

received extensive attention from researchers in related fields because of its strong field localization and enhancement under the optical or electrical excitation, enabling a host of application scenarios.

The authors of recent research in *Opto-Electronic Science* review the widespread applications of optically/electrically driven nanoscale bowtie antennas, summarizing the applications of optically excited bowtie antennas in the fields of optical imaging/trapping, [nonlinear optics](#), nanolithography, and nano-sources. The principle, [preparation](#) and characterization of the electrically driven bowtie tunnel junction are discussed, as well as application prospects in ultrafast tunable optical nano-sources.

This paper provides a comprehensive overview of bowtie based nanophotonics.

**More information:** Zhongjun Jiang et al, Applications of optically and electrically driven nanoscale bowtie antennas, *Opto-Electronic Science* (2022). [DOI: 10.29026/oes.2022.210004](https://doi.org/10.29026/oes.2022.210004)

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