
Contribution ID: **34** Type: **Talk**

# 【404】DNA origami assembled nanoantennas for manipulating single-molecule spectral emission

*Thursday 30 June 2022 15:00 (15 minutes)*

Optical antennas have been widely used for manipulating single-molecule emission properties, including intensity, lifetime, spectrum, or directivity. Investigation of all these properties with high accuracy requires precise positioning of single molecules around the antennas, something experimentally challenging. Here, we make use of DNA origami as a breadboard to control the interactions between molecules and nanoantennas. By making use of a T-shaped structure, we can assemble both monomers and dimers of gold nanorods and precisely place the emitter at any desired position. We show, that we can affect the spectrum of a single fluorophore in a position-dependent manner, reporting excitation of either in-phase or antiphase plasmon modes in a nanorod dimer.

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**Session Classification:** Atomic Physics and Quantum Optics

**Track Classification:** Atomic Physics and Quantum Optics