

McGill
Chemical
Society



McGill



Dr. Philip Tinnefeld

TU Braunschweig, Braunschweig, Germany.

Single-Molecule Nanophotonics with DNA Origami

Tuesday Oct 29nd, 2013 1:00pm
Otto Maass room 10

Scaffolded DNA origami¹ is a simple and efficient technique to design two- and three-dimensional objects of programmed shape. We used DNA origami as a molecular breadboard to arrange objects such as dyes and nanoparticles^{2,3}. We present examples of how DNA origami can enhance biophysical single-molecule experiments.

Applications include the development of nanoscopic rulers for 2D and 3D superresolution microscopy⁴, the switching of energy transfer pathways², and the plasmonic enhancement of fluorescence signals⁵.

References:

1. P. W. Rothemund, Nature 440 (7082), 297 (2006).
2. I. H. Stein, C. Steinhauer, and P. Tinnefeld, J Am Chem Soc 133 (12), 4193 (2011).
3. G. P. Acuna, M. Bucher, I. H. Stein et al., ACS Nano 6 (4), 3189 (2012).
4. Jürgen J. Schmied, Andreas Gietl, Phil Holzmeister et al., Nat Methods 9 (12), 1133 (2012).
5. G. P. Acuna, F. M. Moller, P. Holzmeister et al., Science 338 (6106), 506 (2012).

EVERYONE IS WELCOME!

