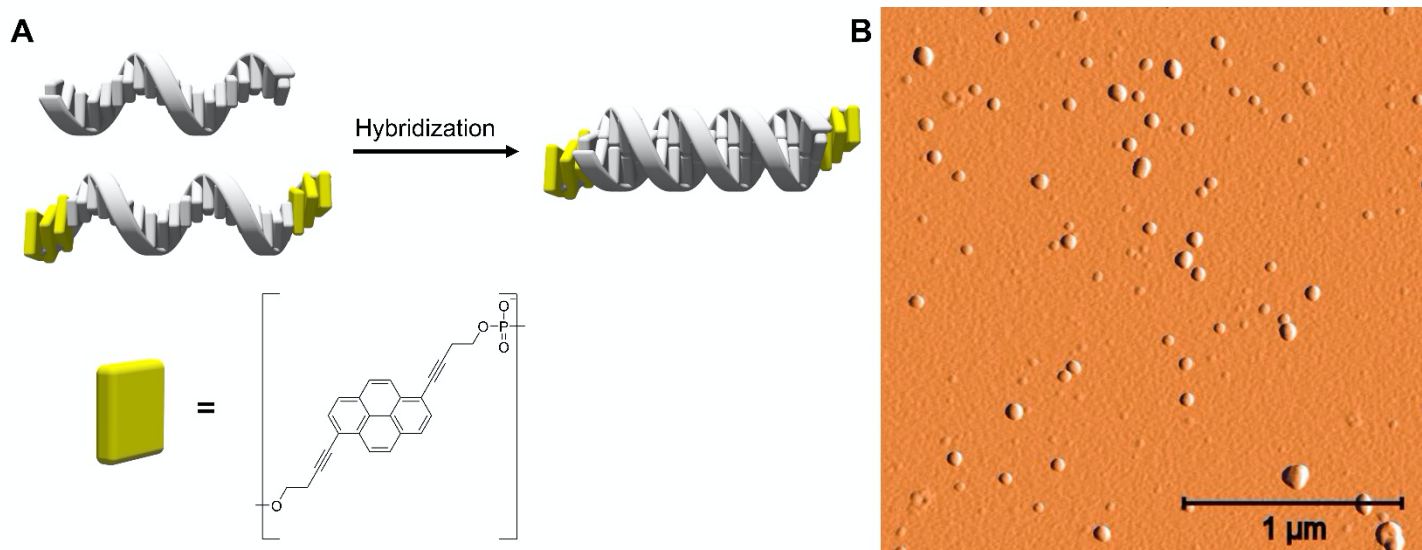


## Pyrene-DNA Conjugates: Influence of sticky Ends on the Supramolecular Self-assembly

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The supramolecular assembly of DNA conjugates has caught attention in supramolecular chemistry. DNA bears some unique features enabling the design of complex nanostructures. The DNA framework offers a defined spatial arrangement of modifications. In preceding work DNA was modified with phenanthrene at the 3'-ends of DNA forming vesicular supramolecular assemblies with unique light-harvesting properties.[1] Interestingly, the modification of DNA with *E*-tetraphenylethylenes sticky ends led to aggregation-induced emission (AIE) active assemblies.[2] In this work, we modified a DNA strand at the 3'- and 5'-end with 1,6-pyrene (Figure 1A). We varied the length of the sticky ends to compare their self-assembly properties (1, 2, and 3 pyrene units on either side). For example, AFM measurements of the 1,6-pyrene-DNA conjugates with a total of 6 pyrene units revealed their self-assembly into vesicles (Figure 1B). In addition to AFM studies, fluorescence and UV-vis spectroscopy measurements will be presented and discussed.



**Figure 1** (A) Sequence of 1,6-pyrene-DNA conjugates. (B) AFM image of the self-assembled vesicles.

[1] C. D. Bösch, J. Jevric, N. Bürki, M. Probst, S. M. Langenegger, R. Häner, *Bioconjugate Chem.*, **2018**, *29*, 1505–1509.

[2] S. Rothenbühler, I. Iacovache, S. M. Langenegger, B. Zuber, R. Häner, *Nanoscale*, **2020**, *41*, 21118-21123.