Light-Harvesting Action Spectroscopy of Single Conjugated Polymer Nanowires

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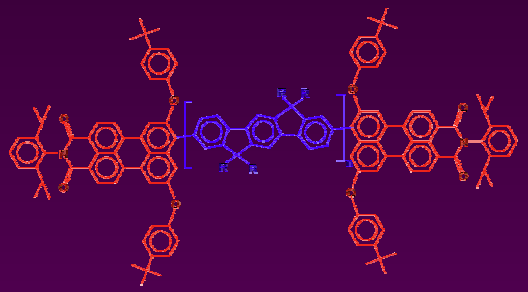
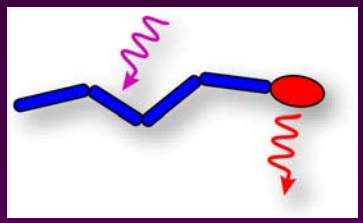
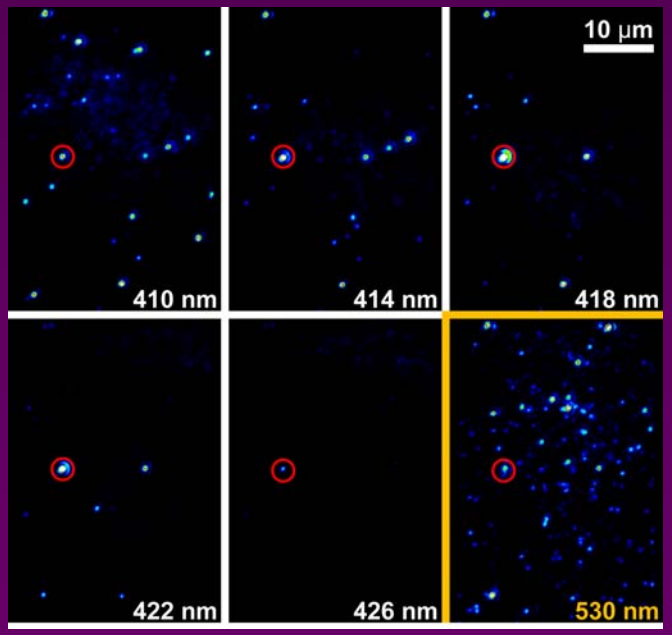
***Light-harvesting polymers**:* The single polymer chain is excited at short wavelength on the backbone. Emission is probed from the perylene end cap.





At low temperatures, the emission spectra of the single polymer chain are narrow. However, we find that the single chain can be excited over a wide range of wavelengths, indicating an intrinsically broad absorption.



As the excitation wavelength is reduced, more and more spots appear in the single molecule microscope images.

The highest spot density is observed for direct excitation of the perylene end cap.

Intrinsically broad single molecule absorption should be beneficial for organic photovoltaics.