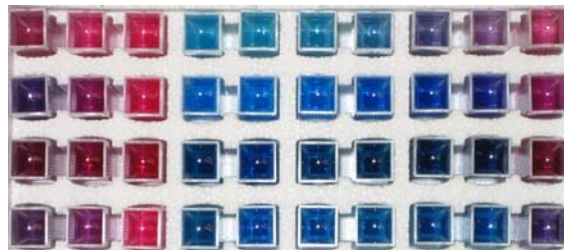


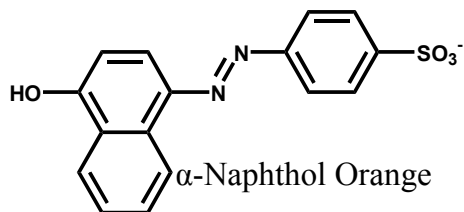
Electrostatic Interactions of Azo Dyes and Micelles

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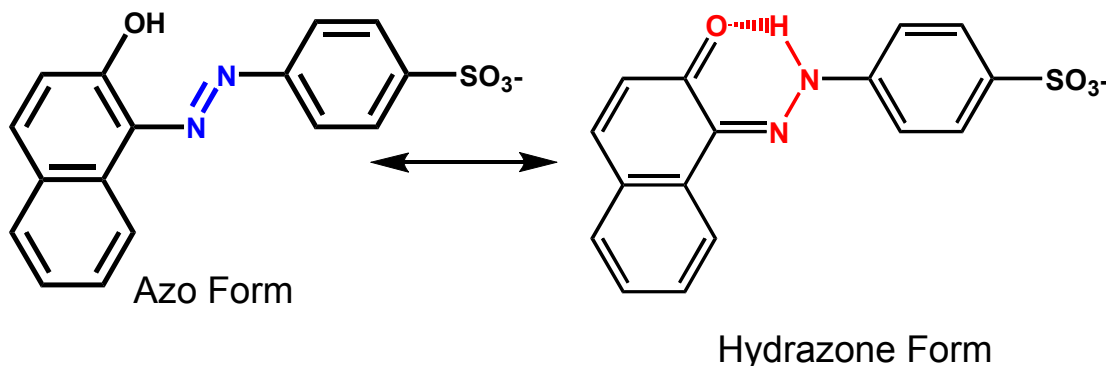
Background: UV-vis spectroscopy is used to probe the electrostatic interaction between supramolecular species and dyes. The sensitivity of azo dyes to their environments makes them ideal candidates for use as nanoprobe.



Approach: Azo dyes were exposed to micelles, vesicles, and solvents of varying polarity. The UV-vis spectra were broken down into component Gaussians to better elucidate the effect of electrostatic interactions on both the structure and environment of the dyes.



The azo dyes studied contain two aromatic rings (naphthyl or phenyl) connected by an azo (-N=N-) group. The dyes differ in substituents located on the two aromatic rings.



Results: We discovered that dyes with an *o*-hydroxyl group exhibited hydrazone character, which became more pronounced in the presence of micelles and vesicles. The dyes also proved to be effective probes of the polarity of their environment.

Future Work: Dyes with two *o*-hydroxyl groups present an interesting situation with potential for two competing hydrazone forms. We will further probe the interactions between dyes and supramolecular structures by determining which form of the dye dominates upon interaction with micelles.

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