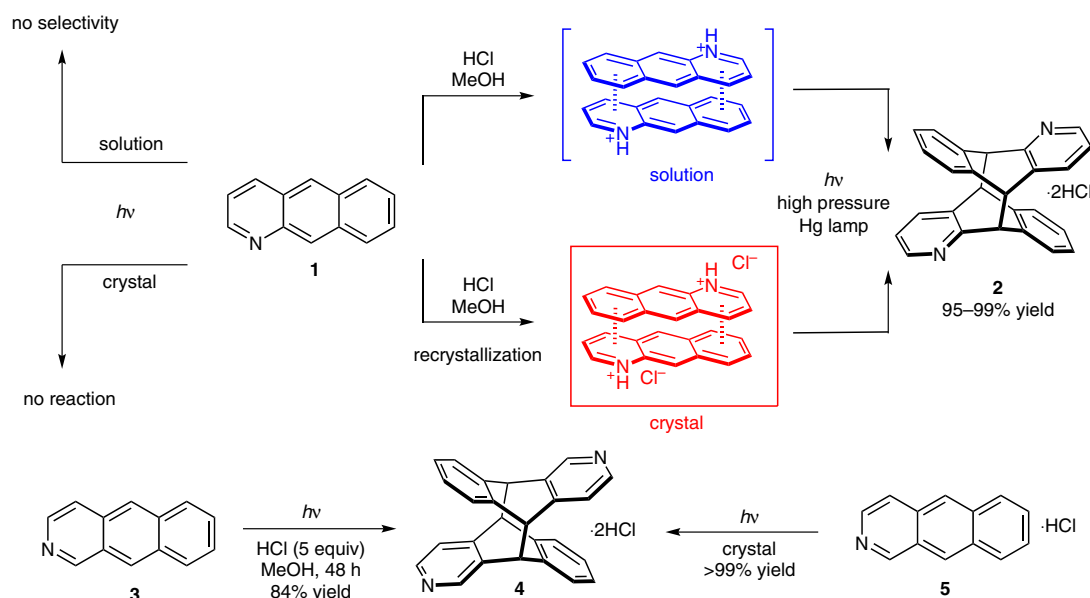


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Making an Azaanthracene Sandwich? Use Cation- π !



Significance: Photodimerization of azaanthracenes **1** and **3** in solution gives a mixture of dimerization products, while irradiation of the crystalline azaanthracenes gives no reaction. However, in acidic solutions photodimerization is highly selective and efficient. Crystals of **1**·HCl and **3**·HCl undergo quantitative conversion into the corresponding dimers.

Comment: Utilization of intermolecular cation- π interactions between the pyridinium cation and the benzenoid portion of azaanthracene (worth -8.34 kcal/mol) renders the [4+4] photodimerization regio- and stereoselective. Because significant aggregation is present in methanol, the reaction is selective both in solution and in solid phase.