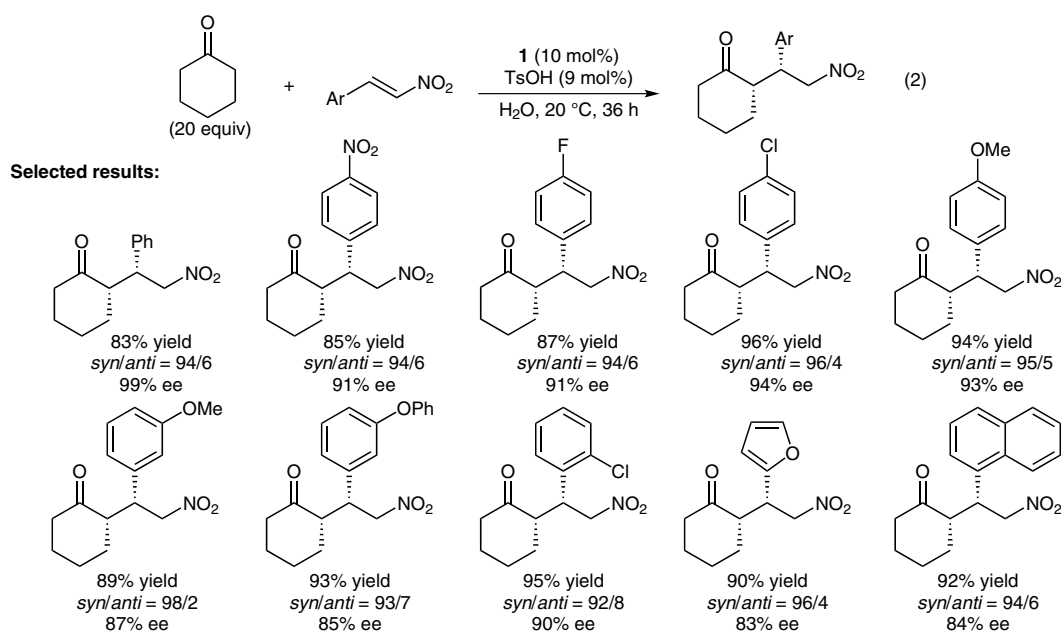
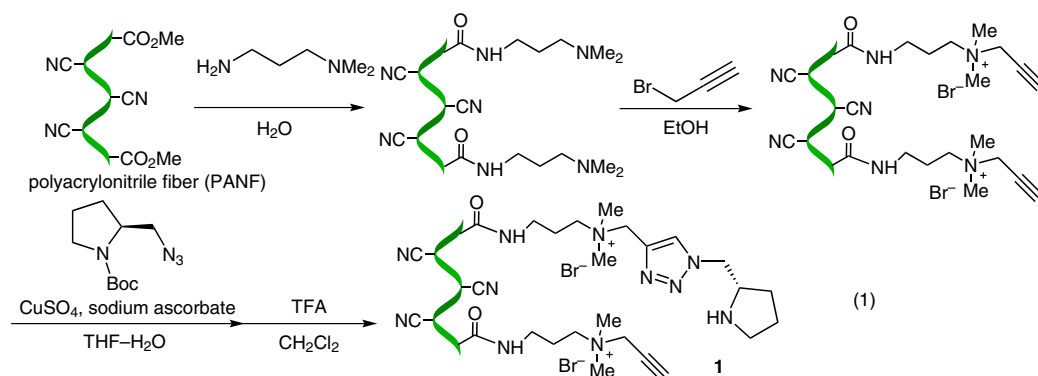


Organocatalyzed Asymmetric Michael Addition of Ketones and Nitrostyrenes



Significance: The polyacrylonitrile-fiber-supported chiral pyrrolidine catalyst **1**, prepared as shown in eq. 1, promoted the asymmetric Michael addition of cyclohexanone to *trans*- β -nitrostyrenes in water to give the corresponding Michael adducts in 83–96% yield, a *syn/anti* ratio of 92:8 to 98:2, and 83–99% ee (eq. 2; 11 examples).

Comment: Catalyst **1** was characterized by FTIR, SEM, and elemental analyses. When a silica column packed with catalyst **1** was used in a flow reaction of cyclohexanone with [(*E*)-2-nitrovinyl]benzene, its catalytic performance was comparable with those observed in the batch reaction. The column-packed catalyst was reused three times without significant loss of its catalytic activity (fresh: 68% yield, *syn/anti* = 97:3, 99% ee; third reuse: 63% yield, *syn/anti* = 95:5, 99% ee).