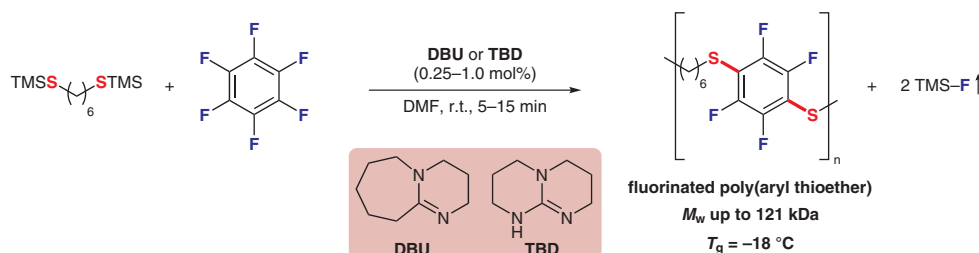
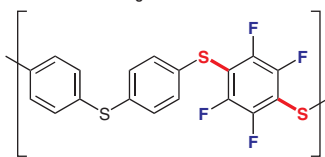
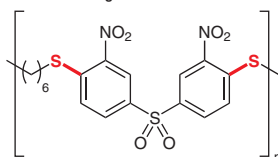
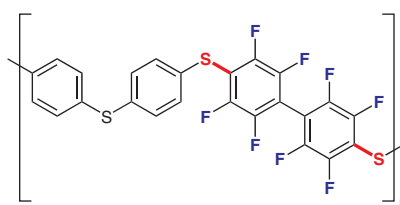
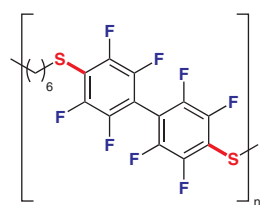


# Salt-Free Polymerization Yields Fluorinated Poly(aryl thioether)s



## Examples:



**Significance:** Fluorinated polymers and poly(aryl thioether)s are each highly sought-after polymer classes because of their desirable material properties, such as high thermal and chemical stability. The fluorinated poly(aryl thioether)s reported herein feature both functionalities and are synthesized by reacting silyl-protected dithiols with fluoroarenes in the presence of an organocatalyst. This approach results in the evolution of TMS-F, obviating the need for removal of ionic byproducts formed in typical nucleophilic aromatic substitution reactions.

**Comment:** Although a number of organocatalysts were evaluated, amines such as DBU and TBD afforded the best performance, in catalytic loadings as low as 0.25 mol%. The reaction times are remarkably short, with the fluoroarene monomer being fully consumed in a matter of seconds. The target polymers were found to be semicrystalline and highly thermally stable, which are characteristic properties of the parent fluorinated and aryl sulfide polymer classes.