**5,5′-Bicalixarene-Based Tubular Conjugated Polymer**

**Significance:** A 5,5′-bicalixarene scaffold was incorporated into the linear backbone of a soluble conjugated polymer \( \text{5} \) via Glaser-type coupling. Monomer \( \text{4} \) synthesis relies on oxidative coupling of calixarene \( \text{1} \), followed by deprotection and selective triflation. Next, the triflate was replaced with TES-acetylene, because direct cross-coupling of \( \text{3} \) with 1,4-diethynylbenzene failed. Deprotection of the alkyne and installation of solubilizing groups furnished the desired monomer in 5% overall yield.

**Comment:** Access to a closed (capsule-type) conformation in bicalixarenes greatly enhances complexation properties of the calixarene scaffold. Indeed, polymer \( \text{5} \) fluorescence (\( \lambda_{\text{abs}} = 420 \text{ nm}, \lambda_{\text{em}} = 450 \text{ nm}, \Phi_{\text{FL}} = 0.37 \)) is efficiently quenched by NO vapor. Importantly, a brief application of low vacuum to remove NO completely restores the fluorescence, indicating that the complexation is reversible.

---

**SYNFACTS Contributors:** Timothy M. Swager, Olesya Haze

**Category:** Synthesis of Materials and Unnatural Products

**Key words:** NO sensing, conjugated polymers, bicalixarenes

**DOI:** 10.1055/s-0031-1289820; Reg-No.: S05812SF