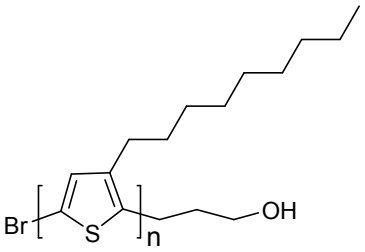
Sample Name:
Hydroxy terminated Poly(3-nonyl thiophene)

Sample #: **P14309C-3NTOH**

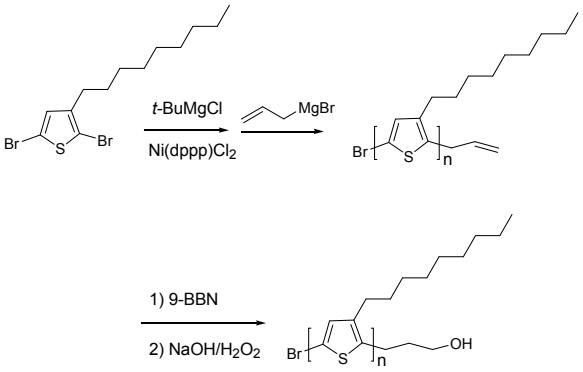
Structure:



Composition:

Mn x 10^3	PDI
4.0	1.58

Synthesis Procedure:



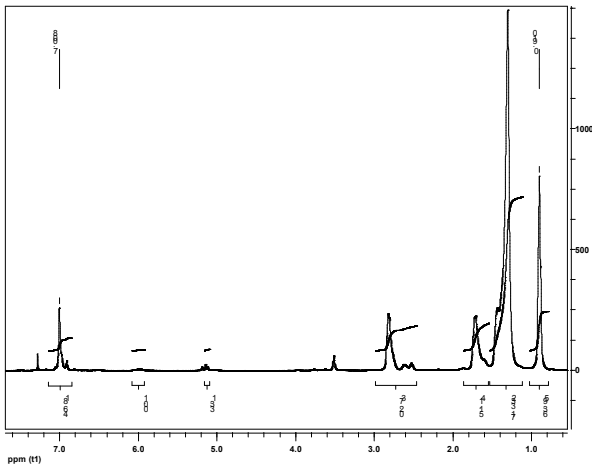
The hydroxy terminated polymer was prepared by treatment of allyl terminated poly(3-nonyl thiophene) with 9-BBN, followed by addition of sodium hydroxide and hydrogen peroxide. The polymer was recovered from reprecipitation into the mixture of methanol and water.

Characterization:

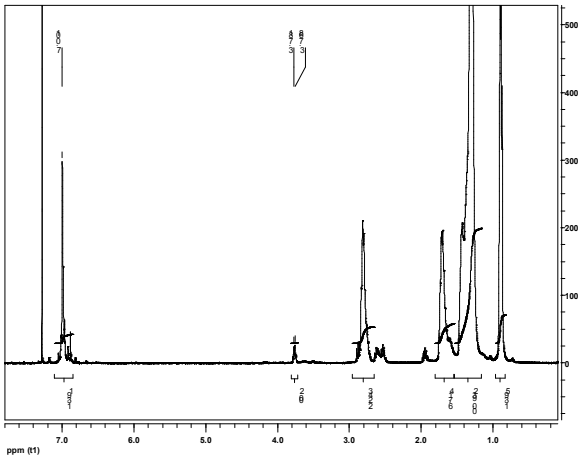
SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co. The molecular weight is calculated based on polystyrene standards. The NMR spectrum was recorded in deuterated chloroform to determine the functionality and the composition of copolymer.
The molecular weight was calculated from ^{1}H NMR based on the ratio of integration of CH_2OH at 3.8 ppm and integration of nonyl proton at 0.9 ppm or thiophene proton at 7.0 ppm and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF.

Solubility:
OH end terminated Poly(3-nonyl thiophene) is soluble in THF, Toluene and $CHCl_3$. It precipitates from methanol and acetone.

^{1}H NMR of allyl end functionalized poly(3-nonylthiophene):

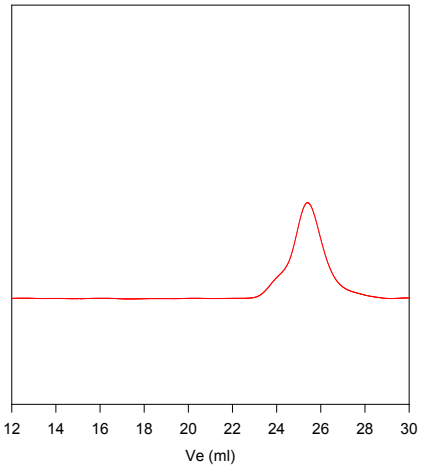


^{1}H NMR of OH end functionalized poly(3-nonylthiophene):



SEC of the polymer:

P14309C-3NTOH



Size exclusion chromatography of Polymer:
M_n=4000, M_w=6300, M_w/M_n=1.58,