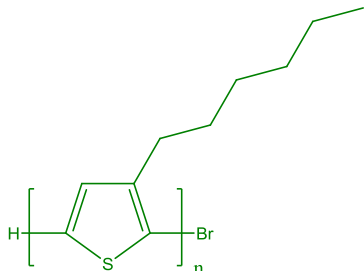


## Sample Name: Poly(3-hexyl thiophene)

Sample #: P6491-3HTh

Structure:



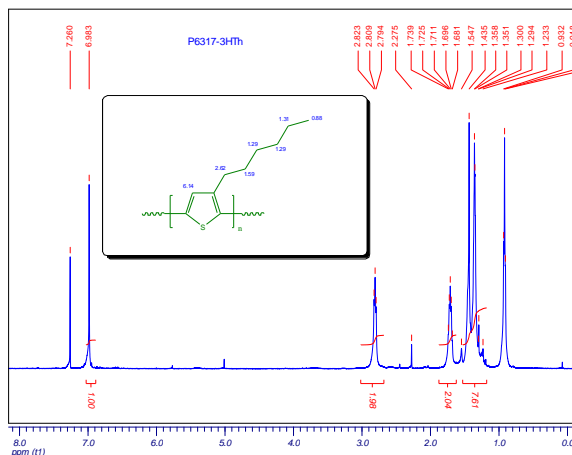
Composition:

Mn x 10 <sup>3</sup>	PDI	Regioregularity
13.1	1.45	~90% (H-T)

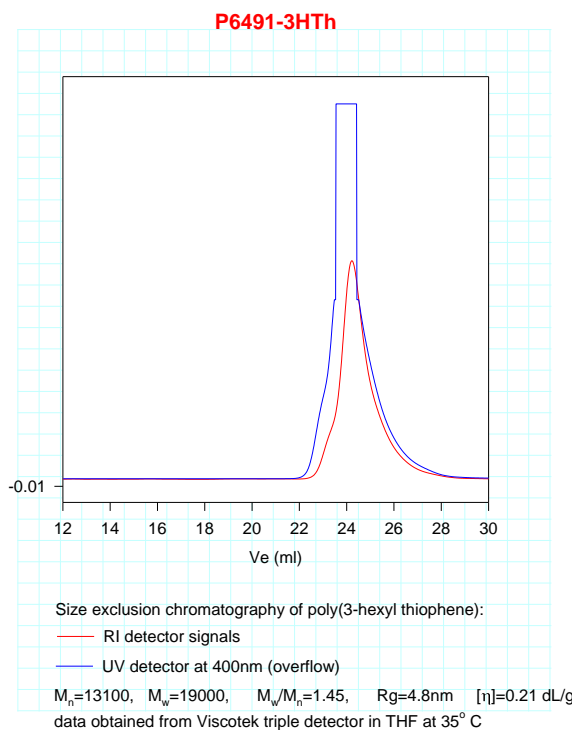
### Solubility:

Poly(3-hexyl thiophene) is soluble in THF, Toluene and CHCl<sub>3</sub>. It precipitates from methanol.

### H NMR of polymer:



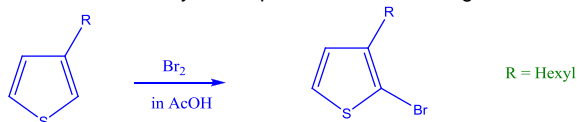
### SEC of Homopolymer:



### Synthesis Procedure:

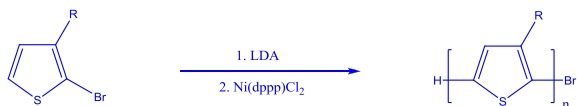
#### 1. Monomer synthesis:

2-bromo-3-hexyl thiophene was prepared according to literature, the brief synthetic procedure as following:



#### 2. Polymerization:

The obtained monomer was polymerized by the means of Grignard metathesis (GRIM).



#### 3. Purification of polymer:

The crude polymer was recovered from reprecipitation into methanol. The inorganic salts were removed by using a Soxhlet extractor with Methanol. The pure polymer was dissolved in chloroform by the same extractor.

### Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF or Chloroform. 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.