

Table 1: Effect the reaction temperature on the yield of different polyindenes (PIn).

Polyindene (PIn)	PIn20	PIn40	PIn60	PIn80
Yield (%)	45	72	86	90

Table 2. Summary of wavenumber and assignation ^[29] of the main IR bands found for the polyindenes prepared at different temperatures (Fig. 3).

Bond	Group	Properties	Wavelength (cm ⁻¹)	
O—H	alcohols, phenols	stretching low concentration	3610–3670	broad
		stretching high concentration	3200–3400	
	carboxylic acids	stretching low concentration	3500–3560	
	alcohols/phenols	bending	1440-1395/1420-1330	m
C—H	aromatic	stretching benzene/sub benzene	3020-3070	w
		op bending monosubs. benzen	700-750	s
		ip bending	1015–1050	
	alkyl	stretching methylene -CH₂- bending methylene -CH₂-	2850, 2925 1470, 1465	m to s s
C=C	conjugated	stretching alkenes	1600-1650	s
	aromatic	stretching (3 or 4 bands) bending	1450,1500,1580,1600 937	w to s
C—O	alcohols	stretching primary	1040–1060	s, broad

		stretching secondary	~1100	s
		bending	1420-1330	m
	phenols	stretching	1200	
	carboxylic acids	stretching	1250–1300	
		bending	1440-1395	m
C=O	carboxylic acid	stretching	1720-1706	s
Ring		out of plane ring bending	428	

op = out- of-plane; ip = in-plane; s = strong; m = medium; w = weak

Table 3. XPS atomic and weight surface composition of the different polymers.

Sample	at%		wt%	
	C	O	C	O
PIn20	88.66	11.34	85.43	14.57
PIn40	98.77	1.23	98.37	1.63
PIn60	97.31	2.68	96.46	3.54
PIn80	96.97	3.03	96.00	4.00
PInO60	93.36	6.64	91.33	8.67
PInO80	91.04	8.96	88.40	11.60

Table 4: Electrical conductivity of different polymers (average of 5 measurements)

Sample	PIn40	PInO60	PInO80
Conductivity (S/cm)	$7.1 * 10^{-4}$	$1.4*10^{-3}$	$5.0*10^{-4}$