



Journal Name

ARTICLE

**Electronic supporting information of the manuscript:**

Received 00th January 20xx,  
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

[www.rsc.org/](http://www.rsc.org/)

**New unsaturated copolyesters based on 2,5-furandicarboxylic acid and their crosslinked derivatives**

A. F. Sousa,<sup>\*†a,b</sup> A. C. Fonseca,<sup>\*†b</sup> A. C. Serra,<sup>b</sup> C. S. R. Freire,<sup>a</sup> A. J. D. Silvestre<sup>a</sup> and J. F. J. Coelho<sup>b</sup>

**Table of contents**

1. Structural characterisation of UPs	S2
1.1 <sup>1</sup> H NMR analysis of UPs	S2
1.2 1.2 <sup>13</sup> C NMR analysis of UP	S2
2. Thermal properties of UPs and cured UPRs	S3

# 1. Structural characterisation of UPs

## 1.1 <sup>1</sup>H NMR analysis of UPs

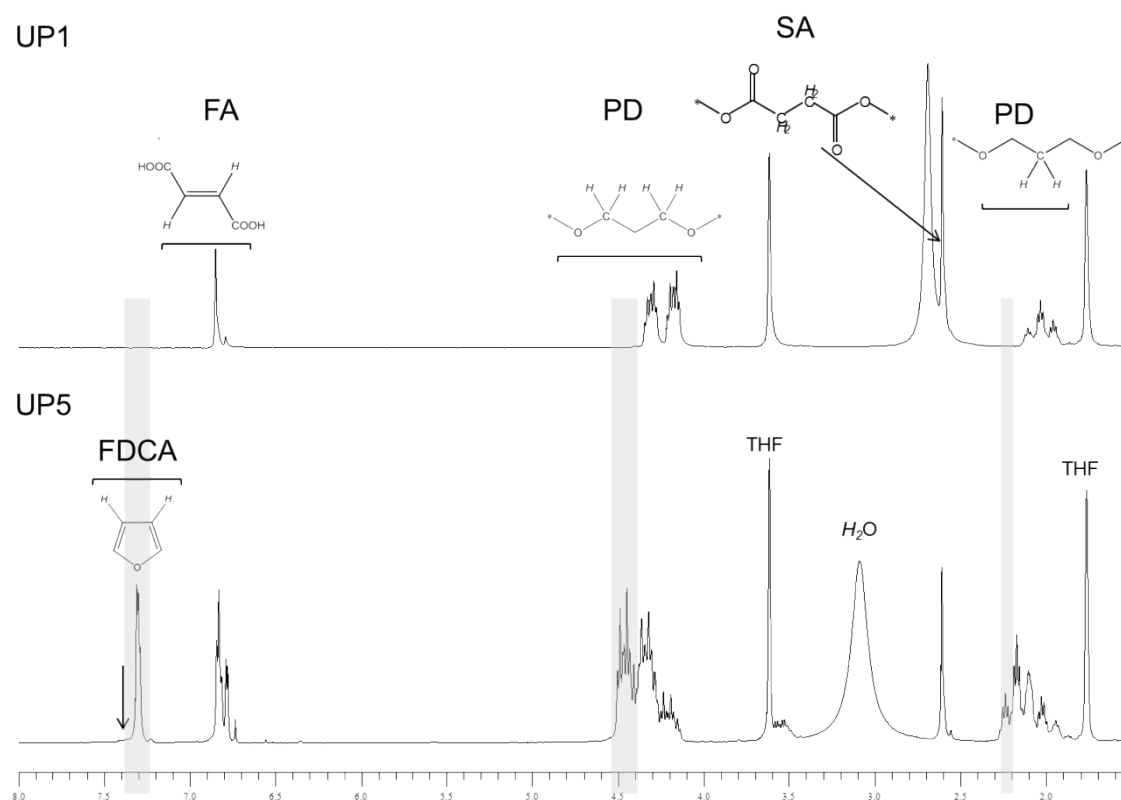


Fig. S1 <sup>1</sup>H NMR spectra of UP1 and UP5.

## 1.2 <sup>13</sup>C NMR analysis of UPs

Table S1 Main resonances from the <sup>13</sup>C NMR spectra of UP1-5 polyesters.

assignment	$\delta$ / ppm				
	UP1	UP2	UP3	UP4	UP5
C=O, SA-PD	173	172	173	173	173
C=O, FA-PD	165	165	165	165	165
C=O, FDCA-PD	-	158	158	159	158
C2, C5; FDCA	-	n.d.	n.d.	148	148
=CH; FA-PD	134	134	134	134	134
C3, C4; FDCA	-	118	119	119	119
OCH <sub>2</sub> , PD-FA, PD-FDCA	63	63	63	63	63
OCH <sub>2</sub> , PD-SA	62	62	62	62	62
OCH <sub>2</sub> CH <sub>2</sub> , PD-SA, PD-FA, PD-FDCA	29	29	30	30	30
COCH <sub>2</sub> , SA-PD	29	29	29	29	29

The <sup>13</sup>C NMR spectra of the prepared UPs (Table S1) are consistent with the main <sup>1</sup>H NMR features, described earlier, displaying accordingly relevant resonances at, viz.:  $\delta \sim 172$ , 165 and 158 ppm arising from the carbon resonance typical of carbonyl ester groups of SA, FA and FDCA, respectively, typical of esters. Moreover the UPs spectra also display resonances associated with the PD units in different chemical environments at approximately  $\delta$  63 and 62 ppm arising from OCH<sub>2</sub> carbon of PD-FA and PD-FDCA, and PD-SA diads, respectively. These attributions are corroborated with literature data on a similar polyester.<sup>42</sup>

## 2. Thermal properties of UPs and cured UPRs

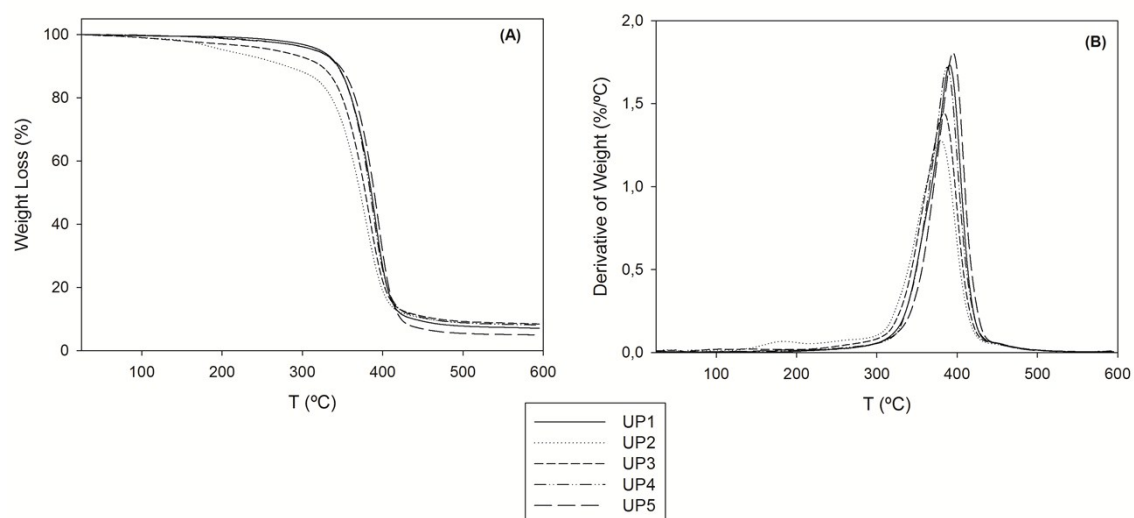


Fig. S2 Thermogravimetric curves of the UPs: (A) TG; and (B) DTG.

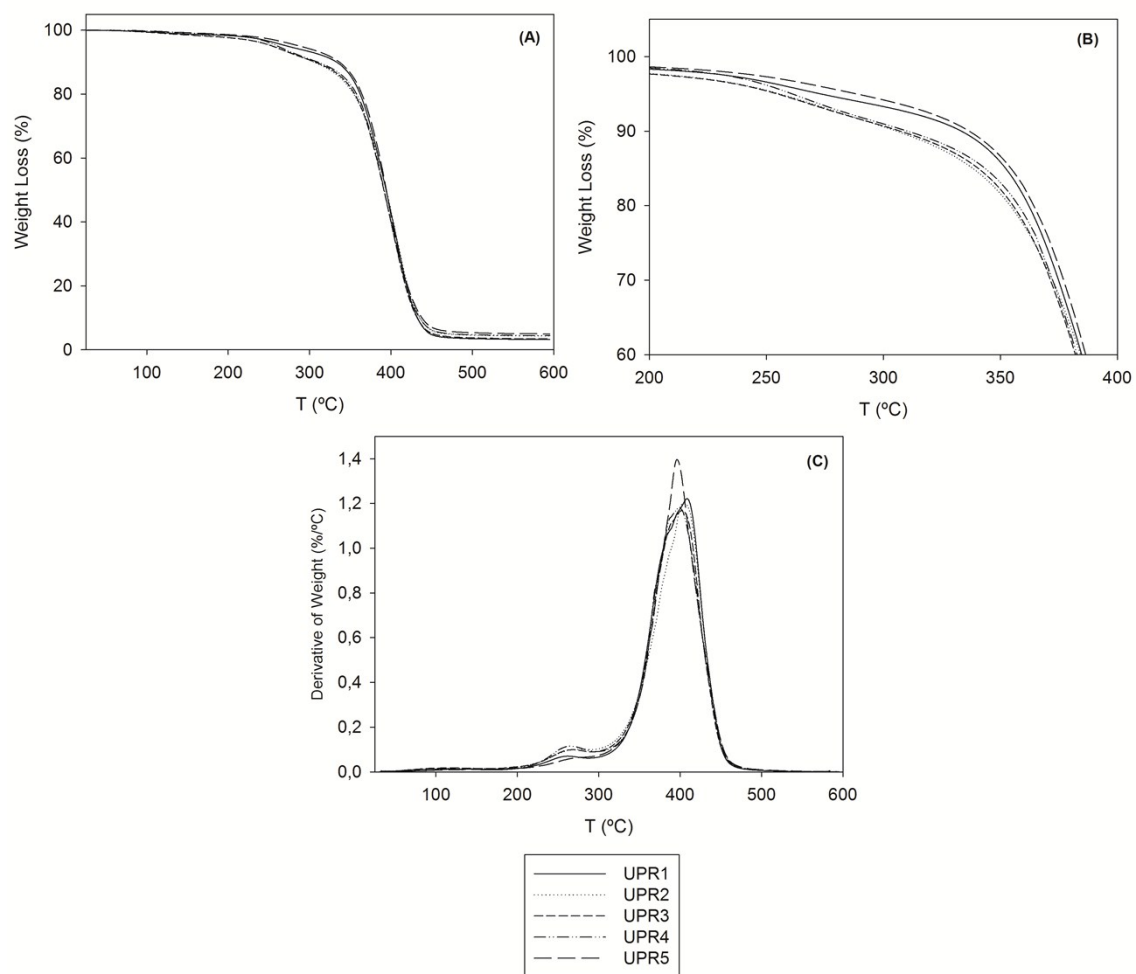


Fig. S3 Thermogravimetric curves of the UPRs: (A) TG; (B) inset of the TG curve; and (C) DTG.

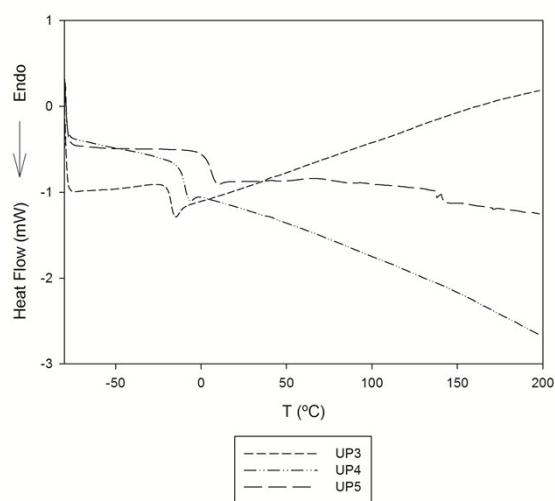


Fig. S4 Heat Flow curves of the UP3, UP4, and UP5.