Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

Synthesis and degradation of branched, photo-labile poly (acrylic acid) and polystyrene

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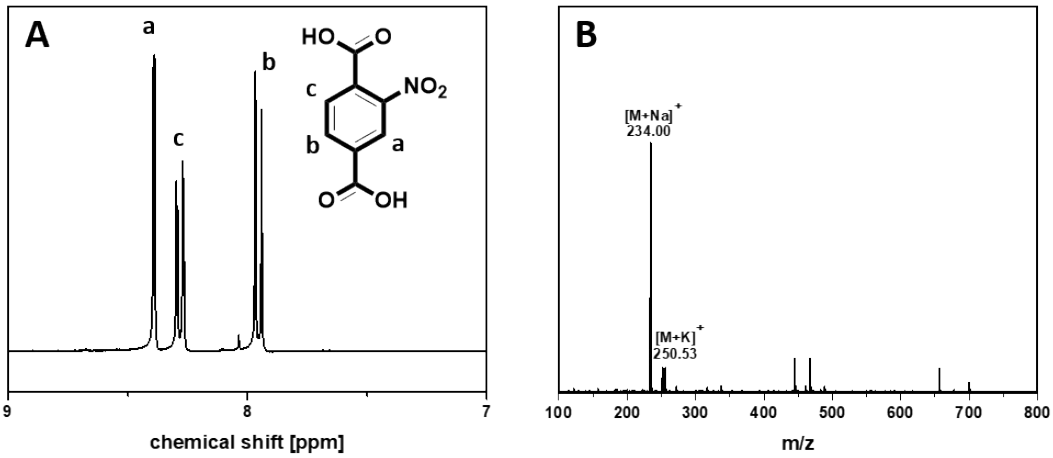

Figure S1: ^{1}H-NMR spectrum in DMSO-d_6 *(A) and ESI mass spectrum (B) of nitroterephthalic acid (NTA).*

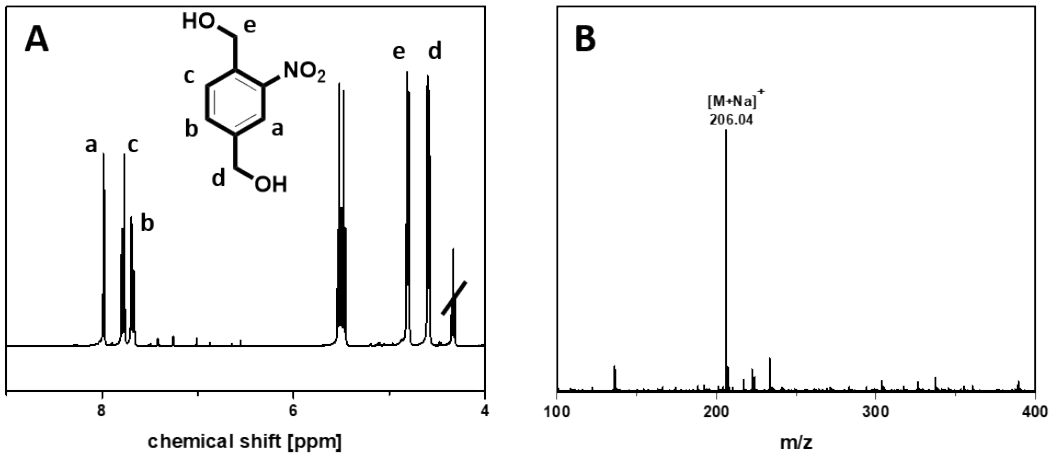

Figure S2: ^{1}H-NMR spectrum in DMSO-d_6 *(A) and ESI mass spectrum (B) of (2-nitro-1,4-phenylene)dimethanol (NPDM).*

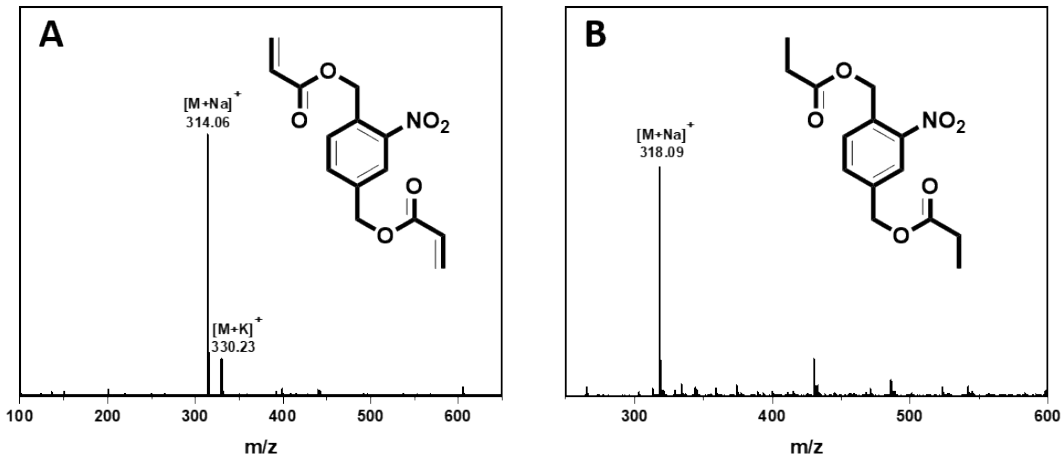

Figure S3: ESI mass spectra of (2-nitro-1,4-phenylene)bis(methylene) diacrylate (NPMDA) (A) and (2-nitro-1,4-phenylene)bis(methylene) dipropionate (NPMDP).

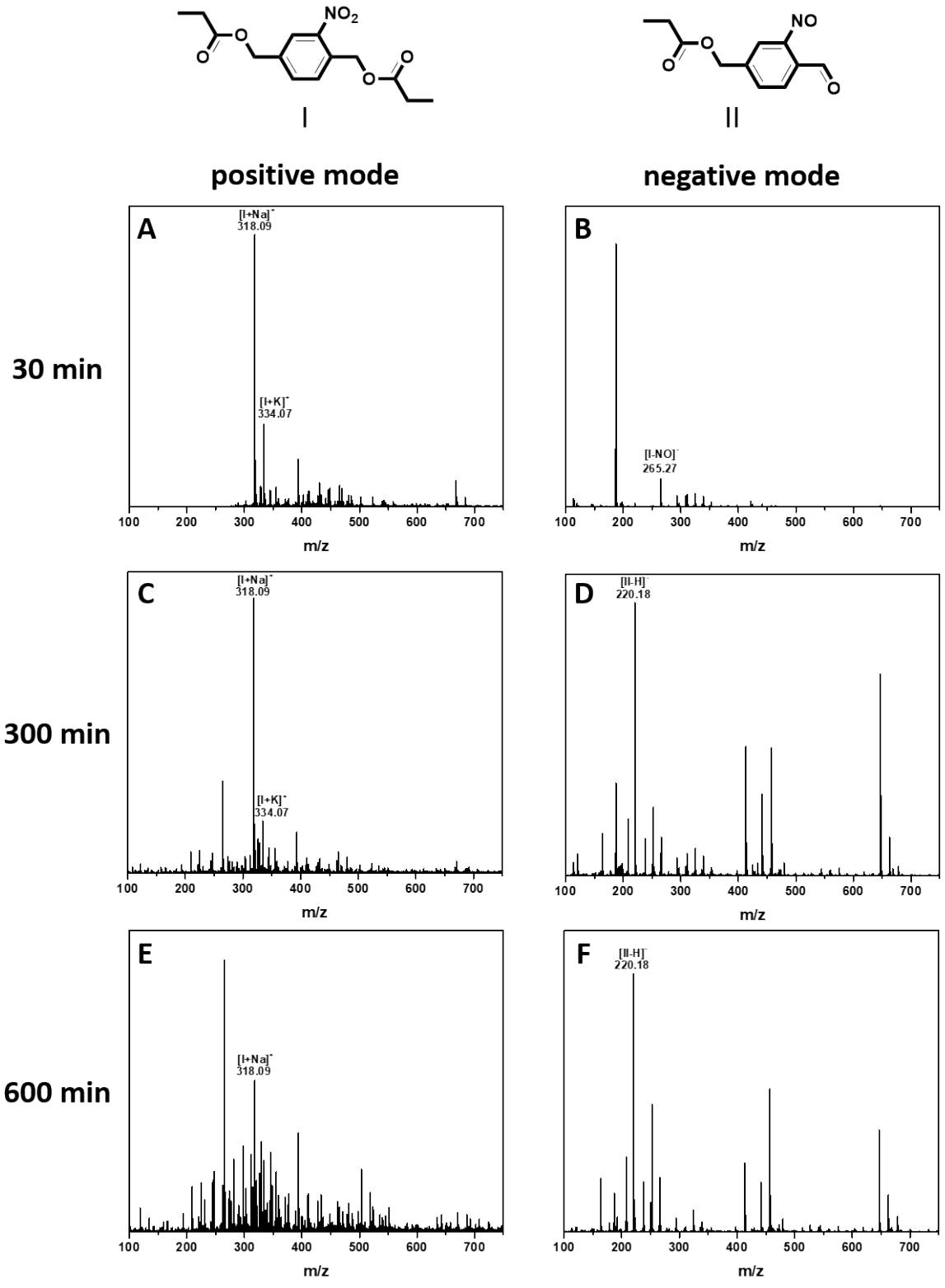

Figure S4: Positive mode ESI-MS data of NPMDP after 30 min (A), 300 min (C) and 600 min (E) of UV irradiation compared to negative mode ESI-MS spectra of NPMDP after 30 min (B), 300 min (D) and 600 min (F) of UV irradiation.

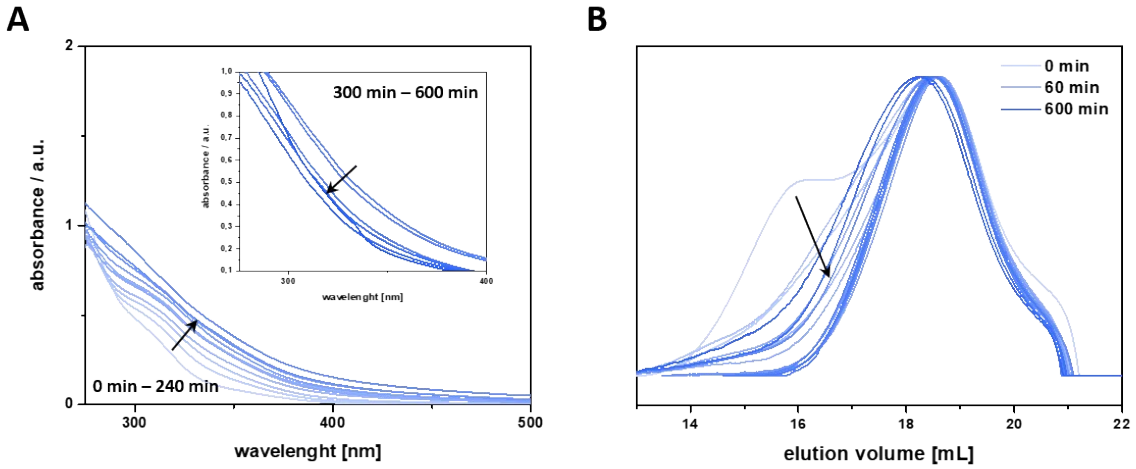

Figure S5: Change of UV-vis spectra (A) and SEC elution traces (B) of branched d-PAA1 during UV degradation in THF.

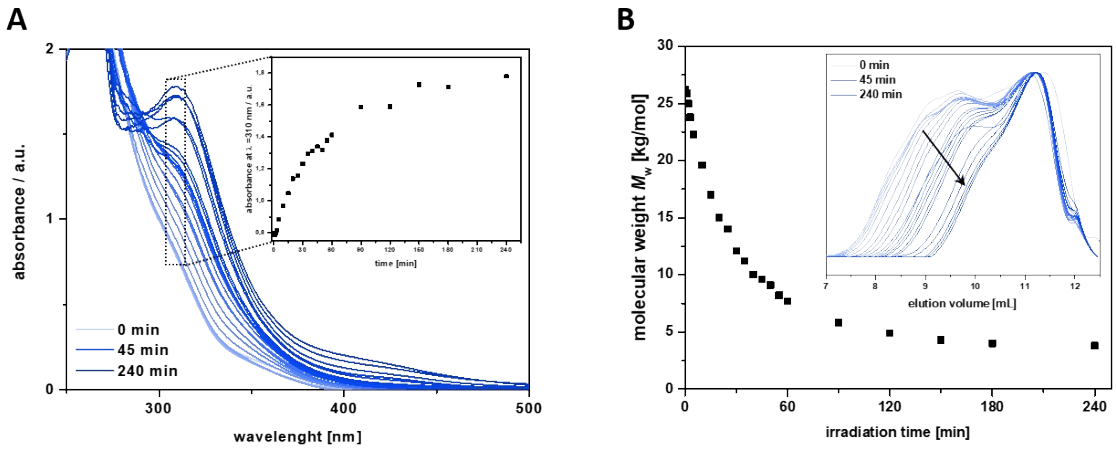

Figure S6: Change in the UV-vis spectra (A) and SEC elution traces (B) of branched d-PS2 with 4% photodegradable crosslinker during UV degradation.

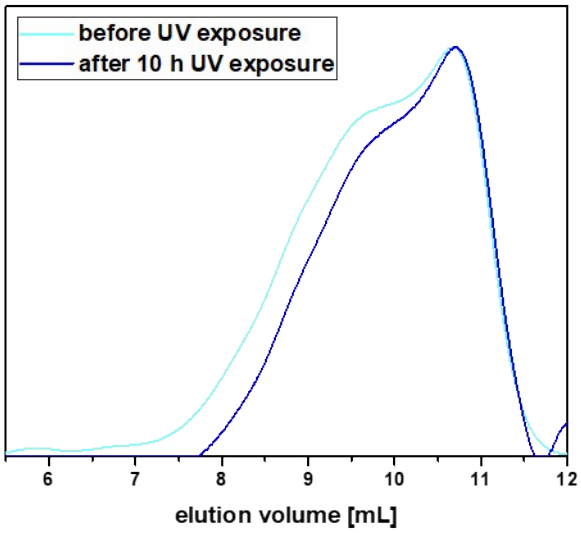

Figure S7: SEC traces of branched non-degradable PS3 before and after UV exposure.