

Functionalized allylamine polyphosphate as novel multifunctional highly efficient fire retardant for polypropylene

Dan Xiao,^{a, b} Zhi Li,^c Uwe Gohs,^a Udo Wagenknecht,^a Brigitte Voit^{a, b} and De-Yi Wang^{a, c*}

^a Leibniz-Institut für Polymerforschung Dresden e.V., Hohe Strasse 6, 01069 Dresden, Germany.

^b Technische Universität Dresden, Organic Chemistry of Polymers, 01062 Dresden, Germany.

^c IMDEA Materials Institute, C/Eric Kandel, 2, 28906 Getafe, Madrid, Spain.

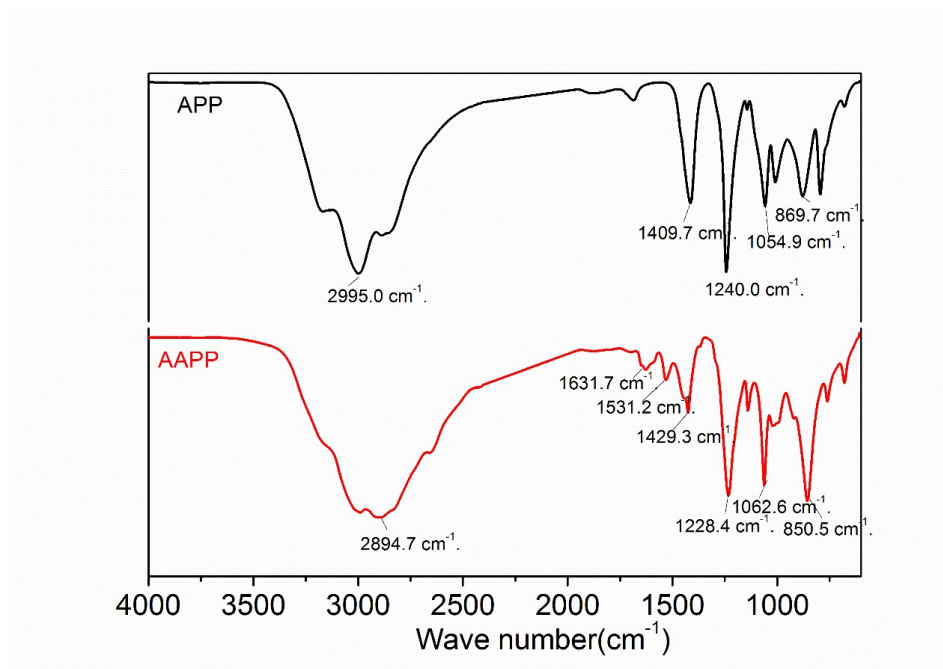


Fig. S1 FTIR spectra of APP and AAPP

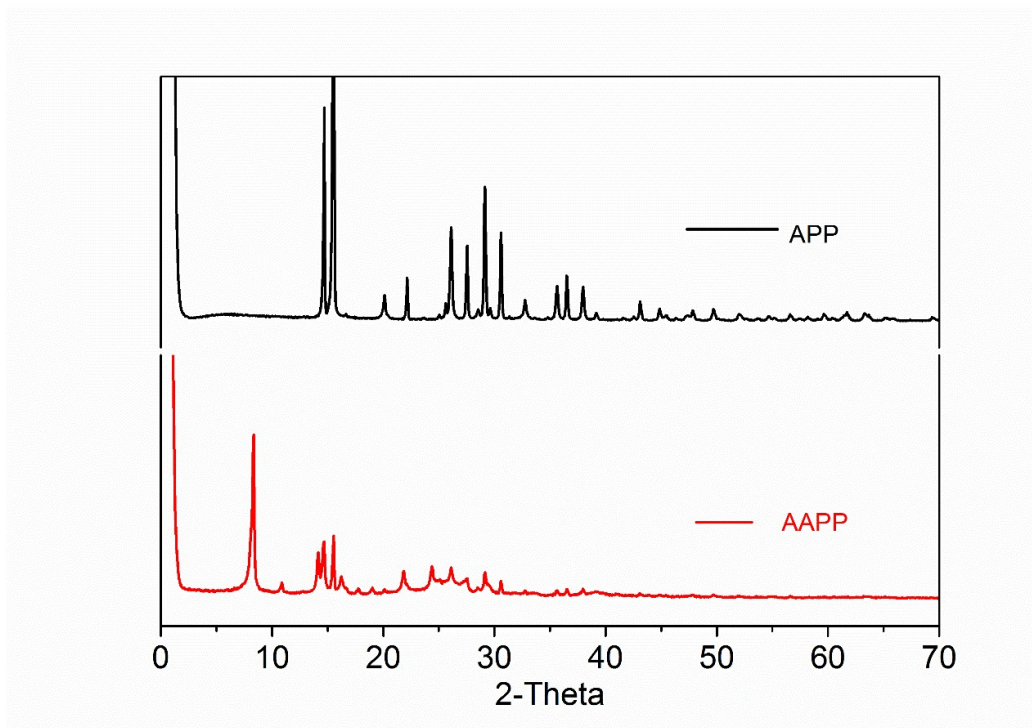


Fig. S2 XRD plots of APP and AAPP

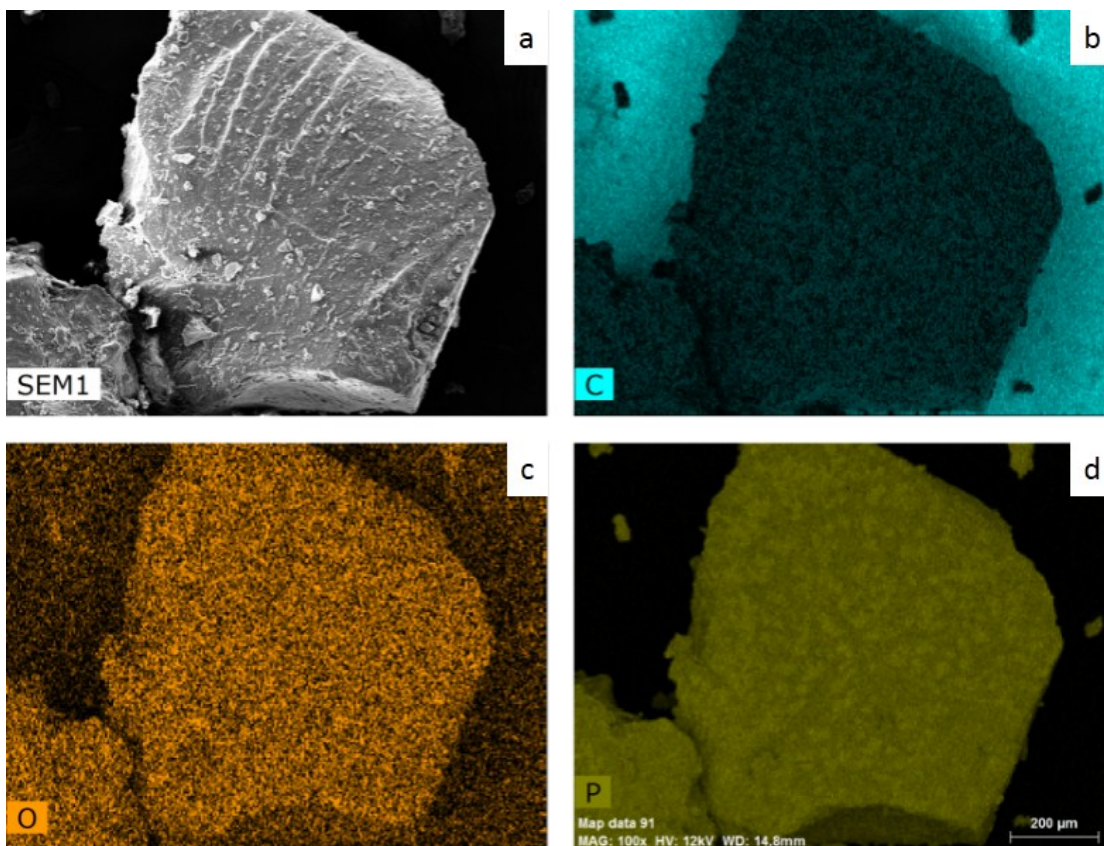


Fig. S3 The morphology of AAPP as obtained by SEM (a) and EDX via mapping of carbon (b), oxygen (c), and phosphorus (d) distribution

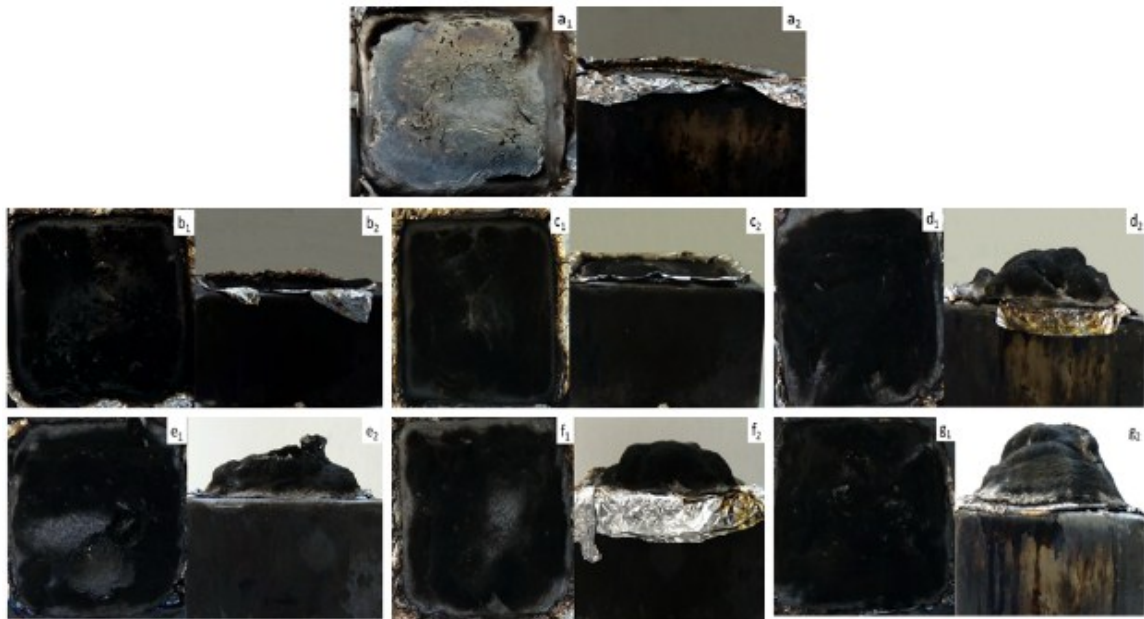


Fig. S4 Digital photographs for the residues of neat PP (a1, a2), PP/25% APP (b1, b2), PP/30% APP (c1, c2), PP/35% APP (d1, d2), PP/25% AAPP (e1, e2), PP/30% AAPP (f1, f2), and PP/35% AAPP (g1, g2) after CC test

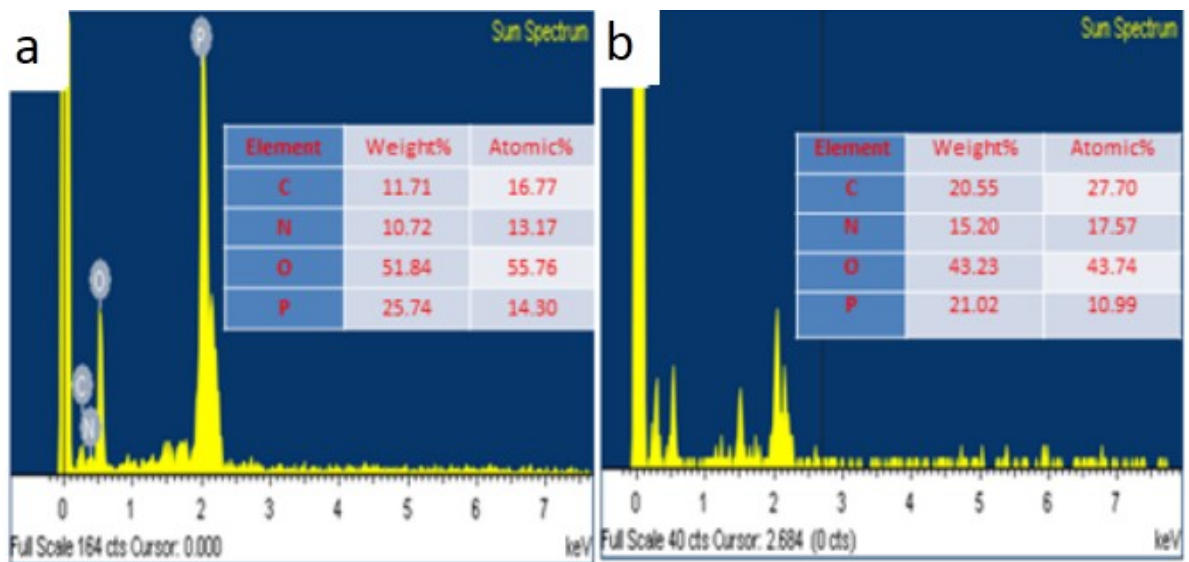


Fig. S5 EDX spectra for the char residues of PP/35% APP (a) and PP/35% AAPP (b)