Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information:

The IPC here is synthesized in a two-stage reaction process, in which the first stage is propylene homopolymerization and the second stage is successive ethylene-propylene copolymerization in a gas-phase reactor, with the ethylene content of 13.5mol%. Through temperature-gradient extraction fractionation (TGEF) and component analysis (by DSC, WAXD and FTIR) of extracted fractions, the major components of IPC were investigated to be homopolymer polypropylene (HPP), amorphous ethylene propylene random copolymer (EPR) and ethylene-propylene block copolymer with different segment lengths (E*b*P). Weight fractions and distribution of the components are shown in the Table S1.

Table S1 The structural information of IPC and its components.

Sample	Weight fraction (wt %)	$\bar{M}_{n*}$	$\bar{M}_{w*}$	$\bar{M}_n/\bar{M}_{w*}$
IPC	/	4.39E+04	1.74E+05	3.96
EPR	20.7	1.14E+05	3.61E+05	3.16
E*b*P	10.1	9.48E+03	4.25E+04	4.48
HPP	69.2	3.29E+04	9.34E+04	2.84