Journal Name

ARTICLE

Electronic supplementary information

Orientation direction dependency of cavitation in pre-oriented isotactic polypropylene at large strains

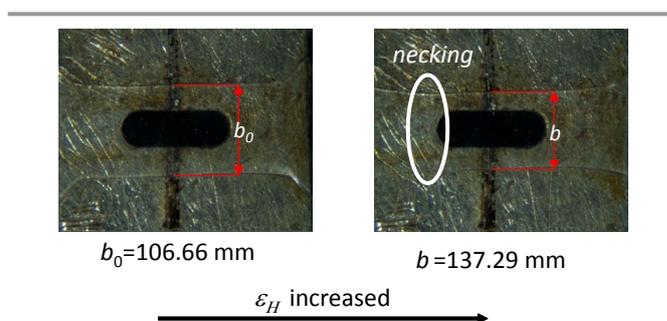Ying Lu, Glen Thompson, Dong Lyu, Philip Caton-Rose, Phil Coates and Yongfeng Men

necking

b_0=106.66 mm

b =137.29 mm

ε_H increased

Fig. S1 Schematic diagram for measuring the width of tensile bar during stretching.
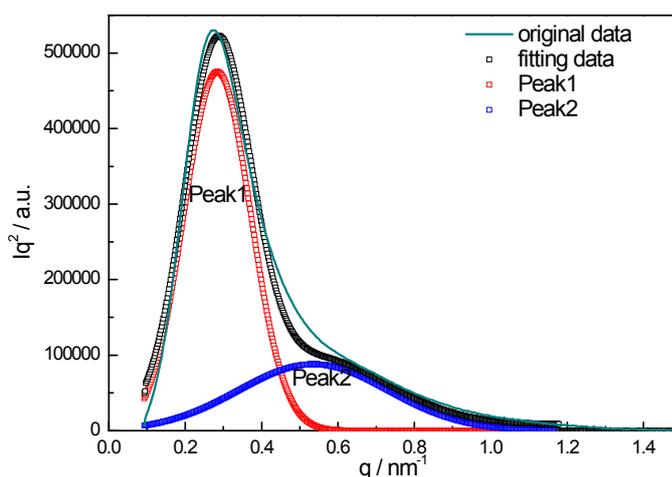

Fig. S2. Fitting curves of sum, of new-born crystallites (peak1), and of original crystallites (peak2) in the iPP580K after die-drawn at 140°C using Lorentz-corrected SAXS curve. The fraction of original crystallites is calculated using the equation of A1/(A1+A2) (A1 and A2 represent the scattering peak area of peak1 and peak 2, respectively.).

According to the fitting results, the scattering area of A1 and A2 are 102539.1639 and 4735.4088 a.u., meaning the fraction of new-born crystallites and un-melted original crystallites are 70.6% and 29.4% in the iPP580K system after die-drawn at 140 °C.