



## MANUFACTURE OF SELF-STRENGTHENED POLYCARBONATE BY EXTRUSION

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In many oriented materials such as polypropylene, polyethylene and PET, the increase in strength of the semi-crystalline phase by elongation is already exploited. Also, the amorphous molecular chains of polycarbonate align themselves by elongation, whereby the original structure is changed. The orientation of the molecular structure and the upward gradient of secondary valence forces cause an increase of stiffness and Young's modulus. Prior to orientation, polycarbonate already has a high strength and impact resistance and, for this reason, further increases due to orientation would disclose an extraordinarily high application potential. In our current work, we focus on films. Polycarbonate films were oriented by a uniaxial stretching line at temperatures of up to 160 °C. DSC measurements resulted in clear crystalline material characteristics, which can be described by a crystalline peak. Thus highly oriented polycarbonate films are expected to exhibit remarkably high stiffness and, as already mentioned, an extraordinarily high application potential.