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Simulation of the Phenomena of Glass Fiber Breakage in Co-Rotating Twin Screw Extruder

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An experimental investigation of the phenomena of glass fiber breakage in co-rotating twin screw extruder was carried out as a function of screw configurations, initial fiber length and loading for isotactic polypropylene and polyamide12. We have developed a model for the kinetics of fiber breakage and evaluated the kinetic constants for various conditions. The glass fiber breaks up and the fiber length was reduced to a steady state length. The results represented in this paper have been compared with the experiment and the simulation for the glass fiber breakdown.