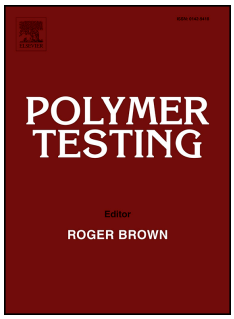

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PII: S0142-9418(18)30168-5

DOI: 10.1016/j.polymertesting.2018.03.005

Reference: POTE 5357

To appear in: *Polymer Testing*

Received Date: 29 January 2018

Accepted Date: 3 March 2018

Please cite this article as: J. Jiang, X. Liu, M. Lian, Y. Pan, Q. Chen, H. Liu, G. Zheng, Z. Guo, D.W. Schubert, C. Shen, C. Liu, Self-reinforcing and toughening isotactic polypropylene via melt sequential injection molding, *Polymer Testing* (2018), doi: 10.1016/j.polymertesting.2018.03.005.

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ABSTRACT: Polymer material exhibits a trade-off between toughness and stiffness, therefore, it remains difficult to develop a strategy that simultaneously realizes improved mechanical strength and toughness. Inspired by the bamboo-like structure, an efficient and simple melt sequential injection molding is proposed to fabricate a controllable skin-core structure of iPP samples with self-reinforcement and toughness. With increasing the melt injection number, the shear layers containing shish-kebabs are progressively thickened, resulting in an effective improvement of mechanical properties. The tensile strength increased from 35.1 to 55.3 MPa for the melt injection number from one to four,

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