Modeling the Crystallization of Branched Polymers from Solutions and Melts

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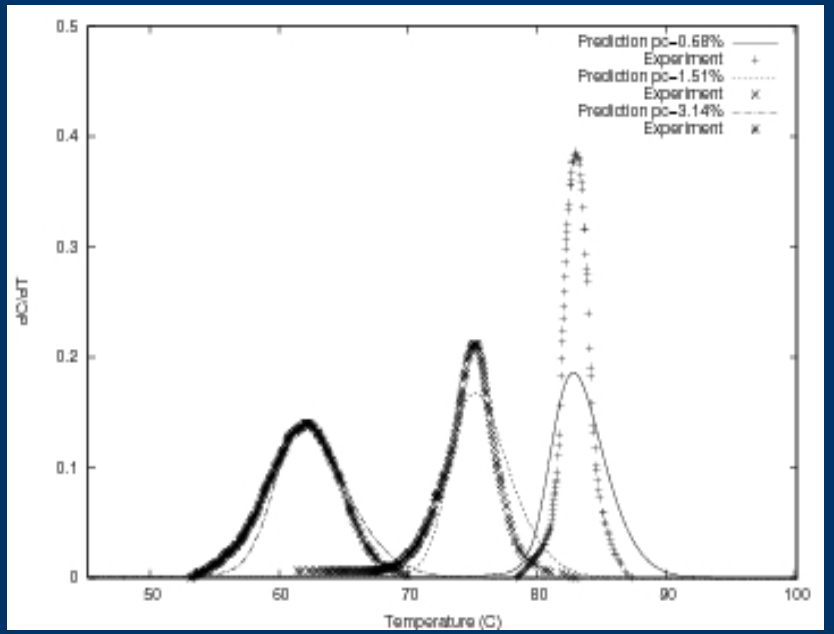
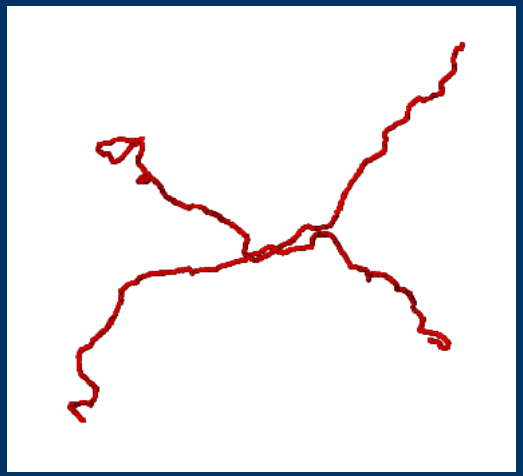
The goal of this study was to understand the nucleation of crystalline domains in linear and branched polymers, using theory and simulations.

A theoretical model incorporating the role of thermodynamics and kinetics to study the nucleation and and crystallization of branched polymers is being developed with the end goal of explaining expperimental CRYSTAF and TREF results.





The theoretical model is currently being supplemented with a microscopic simulation model to shed light on some poorly understood phenomena. Despite the limitations, the theoretical model, in its current form, is able to predict the average comonomer composition in randomly branched copolymers