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Asymmetric Thermal Properties of a Novel Polymer Topology
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We published a paper on “Significantly High Thermal Rectification in an Asymmetric Polymer Molecule Driven by Diffusive versus Ballistic Transport” in Nano Letters in the beginning of 2018, before this grant starts. In this published work, we studied only polynorbornene-graft-polystyrene. We plan to conduct a follow-up work to identify the structure-property relations for various asymmetric polymers, such as different cone angles, backbone lengths, strain fields, rigidity and crystallinity of backbone and side chains. However, due to my move from Virginia Tech to Cornell, I missed the recruiting cycle and did not find a proper student to work on this project. We applied for supercomputer resources over the past year to prepare for the large molecular dynamics simulations we proposed in this project. We do not have research progress to report during this reporting period.