BIODEGRADABILITY STUDIES OF POLYETHYLENE/BIOMASS COMPOSITES. ***R.J. Pollard,*** *M. Miri*, Department of Chemistry, and J. Lodge, Department of Biology, rjp8147@rit.edu, mjmsch@rit.edu, jslsbi@rit.edu.*

Our lab is investigating the biodegradability of polyethylene/starch composites, which have been previously polymerized in-house using single-site catalysts. Three types of fungi were applied for the biodegradability studies: Aspergillus, Myrothrecium, and Trichoderma. In an initial set of experiments different types of polyethylene starch composites in powder form were added to a minimal salt medium and inoculated with spores of Aspergillus. Photographs were taken every week for a period of six weeks to monitor the growth rate and size of the fungal mycelium. As expected the fungal mycelial growth was the largest with the starch samples. However, even the polymer composites underwent some changes, which were less distinct because of the small sample size. Currently our lab is running experiments in Petri dishes made with the minimal salts medium and the only carbon source being larger amounts of composites in form of films using all three fungi. Our lab is monitoring a total of 21 Petri dishes (7 different polymer or composite samples per fungus) over a period of at least 25-40 days. It is expected that as the fungi take up the starch component within the polymer, the polymer films will gradually break up accompanied by growth of fungal mycelia mats.