

Project Id	99
Project Title	UV degradation effects in eco-composites
IName	Chen
fName	Kathy
Faculty Phone Number	756-6634
Faculty Email Address	kcchen@calpoly.edu
Additional Faculty	Ed Saliklis, ARCHE
Faculty Department	Materials Engineering
Project Description	New, eco-friendly materials are being developed for architectural structures, but also need to be studied for their properties and performance under realistic conditions. Recycled polyethylene with agricultural fibers show very promising mechanical properties, but the ability to withstand exposure to the sun for long periods of time still needs to be tested and modeled. Different formulations of eco-composites are to be subjected to accelerated weathering by UV radiation and then characterized by scanning electron microscopy (SEM), Fourier Transform Infrared spectroscopy (FTIR), and bend tests. The effects of deflocculants and UV stabilizers within the polymer are to be investigated in order to optimize the material. Modeling of the creep behavior of the eco-composites is also to be done.
Interdisciplinary Nature Description	This project naturally brings together architecture, civil engineering, materials engineering, and chemistry. Faculty from CENG and ARCH are already collaborating.
Links	
Number of Honors Students Requested	2
Applicable Majors	MATE, ARCE, CHEM
desired_res	teamwork, experience with materials characterization tools (SEM, FTIR, etc.)
Date Added	2008-10-17 10:32:47
Active	1