Joseph D. Smith

Chemical and BioChemical Engineering Department

Personal 2022 Goals

Goal 1: Develop and Establish a New Process to Produce Biochar from Mixed Feedstock with Carbon content > 75% with selected minerals to make it effective in concrete addition and as a soil amendment.

Key Job Responsibility:  Research

Target Date: December 2022

Limiting Factors:

1. Well controlled biomass gasifier operating safely and efficiently in my high point lab
2. Sufficient Hemp feedstock with associated other feedstocks including coal, oil share, RDF, hard wood blended pellets
3. Functioning partnership with Idaho National Lab where I can have my feedstocks pelletized
4. Established analytical methodologies to quantify biochar according to EPA guidelines and requirements
5. Dedicated well trained graduate student to run experiments to develop and test the process

Goal 2: Expand an existing course, either Process Modeling (ChE 5110) or Process Intensification (ChE 5001) as online course and work with AIChE to offer course online

Key Job Responsibility:  Teaching

Limiting Factors:

1. Regular time to work on expanding course curricula materials
2. IT support to incorporate interactive media to improve teaching effectiveness
3. Establishing course documentation online with easy access for students

Goal 3: Optimize service time to focus on key subcommittee work that has the most impact

Key Job Responsibility:  Service

Limiting Factors:

1. Department requirements to cover “non-value added” committee work
2. Support from Department chair to limit participation in college and university committees