

Idaho Incubation Fund Program

Bi-Annual Progress Report Form

Proposal No. IF13-005 (*grant number*) (*UI grant #BF2889*)
Name: B. Brian He
Name of Institution: University of Idaho
Project Title: Advancing glycerol conversion technology for commercialization for sustainable biodiesel industry

Information to be reported in your progress report is as follows:

1. Provide a summary of project goals/milestones for the period just completed, accomplishments for the period just completed, and plans and goals for the coming quarter:

Project milestones set for the period of 07/2012-06/2013 are as below:

Task 1. Implementation of heterogeneous powder catalyst in continuous-flow reactor system

Task 2. Evaluation of multiple-catalyst system

The goal at this stage is to further evaluate the catalytic system for the conversion of glycerol based on the findings from our previous preliminary research. The main focus is to implement the catalytic system in a continuous-mode towards a realization for potential commercialization. The major challenge is the retention and reuse of the heterogeneous catalysts which was in powder form as previously investigated, in a continuous-flow system.

We are conducting the project as proposed and currently exploring the potential techniques that would lead to the realization of heterogeneous catalyst(s) in continuous-flow system. One of our attempts is to utilize the catalysts in shaped form. The collaborator, Dr. Randy Maglinao at the Bio-Energy Center of Montana State University-Northern (MSUN), had actively been conducting the project in a timely manner. A continuous-flow system has been constructed and tested preliminarily, the needed catalysts and chemicals were ordered, and investigation on process parameters using the multi-catalyst system is on-going.

The project is currently on schedule. Project activities could be progressed more if the PI could have recruited a research assistant (RA) earlier in the Fall semester. The RA will be on board in the coming Spring semester.

We will continue the project activities and accomplish the milestones by March 2013 as proposed.

2. Provide a summary of budget expenditures for the period just completed:

Additional to the research assistantship and the PI's summer salary which are approx. 44% of the overall project cost, the major costs are the catalysts and chemicals. The research assistantship and the PI's summer salary have not been spent yet. We have purchased pelletized catalysts from the leading chemical company BASF. The cost was \$3,250 for two packages of the catalyst (total 1,500 grams; we may need to purchase additional as the

project proceeds). We have also purchased other needed chemicals and reagents.

3. List patents, copyrights, plant variety protection certificates received or pending:
No potential proprietary disseminations have been generated yet.

4. List invention disclosures, patent, copyright and PVP applications filed, technology licenses/options signed, start-up businesses created, and industry involvement:
n/a.

5. Include funding burn rate:

The burn rate of the funding is approximately 40% of total \$50,000, including the sub-award of \$18,000 to the collaborator, as of December 2012.

6. Any other pertinent information:
n/a.