Project Title: ONAMI Microchannel Biodiesel Production from Oregon Vegetable Oils

Project Funding: Grant from Oregon Tall Fescue Commission, OSU Agricultural Endowment, Cytec Systems

Project Description: This project is focused on finding alternative crops for Oregon grass seed growers that can be used for production of biodiesel fuel. The two part project first focused on identifying crops such as mustard seed and rape that can economically allow production of biodiesel fuel and can be grown in Oregon. The second part of the project involved developing a biodiesel microreactor that would allow low cost mini biorefineries distributed throughout the Northwest. To date, the project has shown that biodiesel can be produced in Oregon at approximately the same cost as a gallon of gasoline. Early research on the development of the biodiesel microreactor has shown that this ONAMI technology, through its small size significantly decreases the time necessary to produce the biofuel compared to a large refinery, thus furthering the potential to reduce the overall cost of biofuel production.

Student Involvement: This project involves three graduate students

Natural Resource Utilization: The development of compact processing systems for fuel production from indigenous resources could revolutionize the processing of agricultural products and significant improve the financial return to the farmer, and ultimately the Oregon economy. ONAMI technology will result in the development of small modular systems that produce bio products which can be economically located throughout the State, rather than in a centralized facility. This substantially reduces costs for transportation of oil-based agricultural products, thus reducing the overall cost of production/distribution of the bio product. ..

Innovations, new companies and jobs: While the systems described above are being developed for military applications all have a strong potential for commercial products. The market for modular biodiesel production and advanced reformers is between $500 million and $2 billion per year. Some of these technologies are within 1 to 3 years of commercialization resulting in multiple new companies in Oregon with substantial business volume.