Using Library Databases to Identify Funders & Prepare Proposals
Primary Uses of Databases

• Identify agencies providing funding associated with your area of interest.
• Develop detailed understanding of types of research funded by individual agencies.
• Gather information on personal research history for inclusion in proposals.
  – What papers have you written?
  – How widely have they been cited?
• Examples of useful databases
  – Web of Science (formerly Web of Knowledge)
  – Scopus
Getting Started

• Library Homepage: lib.fit.edu
Researching Funding Sources
Let’s Start with Web of Science...
Web of Science: Refining Your Results
Web of Science: Refining Results by Funding Agency
Web of Science: Detailed Listing of Funding Agencies
And What About Using Scopus?

- Using Scopus to search for funders requires using the Advance Search.
Scopus: Searching for Funders

Need to specify the funder(s) as part of the search query.

– Template provided to help in writing the query.

– Still, may not be for the faint of heart.
Environmental Progress and Sustainable Energy
Volume 32, Issue 4, 2013, Pages 891-901

ASI: Toward the optimal integrated production of biodiesel with internal recycling of methanol produced from glycerol (Article)

Abstract
In this article, we present the optimization of the production methanol from glycerol and its integration in the production of biodiesel from algae. We propose a limited superstructure where the autoforming are evaluated. The gas obtained is cleaned up and its composition is adjusted in terms of the ratio CO/H₂ using three possible alternatives (bypass, PSA and water gas shift). Na is fed to the methanol synthesis reactor and the products obtained are separated. This synthesis is coupled with the production of biodiesel from algae using heterogeneous catalyzed in formulated as a Mixed Integer Nonlinear Programming (MINLP) that is solved for the simultaneous optimization and heat integration of the production of biodiesel with recycle of methanol autoforming for a production cost of $0.56 gal⁻¹, 3.65 MJ/gal of energy consumption and water consumption of 0.79 gal/gal. The integrated process is $0.2 gal⁻¹ more expensive than the dependency of the process on fossil fuels. © 2013 American Institute of Chemical Engineers Environ Prog. 32: 891-901. 2013 Copyright © 2013 American Institute of Chemical Engineers Environ

Author keywords
algae; biodiesel; energy; glycerol; mathematical optimization; methanol; process design

Indexed keywords
Catalyzed reactions; energy; integrated production; Mathematical optimizations; Methanol synthesis reactors; Mixed integer nonlinear programming; Simultaneous optimization; Water consumption

Engineering controlled terms: Algae; Biodiesel; Bypass ratio; Carbon dioxide; Energy utilization; Glycerol; Methanol; Nonlinear programming; Optimization; Process design; Recycling; Water gas shift; Water supply

Engineering main heading: Synthetic fuels

Species Index: algae

Funding Details
Number; Acronym; Sponsor: CBET0966524; NSF; National Science Foundation

How can you use this information?
Exploring Funding Streams

• Government funding agencies will often provide websites with information on funded studies.

• For example, the National Science Foundation’s award search website.

[Image showing the National Science Foundation's website]
Using the NSF Advanced Award Search

So, how do you find information about Award CBET0966524?
NSF Funding Details Search Result

Advanced Search Results

You Searched For:

- NSF Organization: Division of Chemical, Bioengineering, Environmental, and Transport Systems
- Active Awards: true
- Expired Awards: true
- Award Number: Exactly 0966524
- Refined by

Export up to 3,000 Awards: CSV | XML | Excel | Text

Sort By: Relevance    Results size: 30 per page

Multiobjective Optimization Strategies for the Design of Sustainable Biofuel Processes
Award Number: 0966524; Principal Investigator: Ignacio Grossmann; Co-Principal Investigator; Organiz

Export up to 3,000 Awards: CSV | XML | Excel | Text

Sort By: Relevance    Page size: 30 per page

List
Examples of NSF Funding Details

Award Abstract #0966524
Multiobjective Optimization Strategies for the Design of Sustainable Biofuel Processes

NSF Org: CBET
Division of Chemical, Bioengineering, Environmental, and Transport Systems

Initial Amendment Date: January 27, 2010
Latest Amendment Date: August 8, 2012
Award Number: 0966524
Award Instrument: Standard Grant

Program Manager: Maria Burka
CBET Division of Chemical, Bioengineering, Environmental, and Transport Systems
ERG Directorate for Engineering

Start Date: March 1, 2010
Expires: February 26, 2014 (Estimated)

Awarded Amount to Date: $343,285.00
Investigator(s): Ignacio Grossmann grossmann@cmu.edu (Principal Investigator)

Sponsor: Carnegie-Mellon University
5000 Forbes Avenue
PITTSBURGH, PA 15213-3815 (412)268-5527

NSF Program(s): PROCESS & REACTION ENGINEERING

Program Reference Code(s): 050E, 7752, 9102
Program Element Code(s): 1403
Examples of NSF Funding Details

**ABSTRACT**

0966524

Grossmann

Sustainable supply of energy has become one of the major challenges in this century. Liquid biofuels provide one of the options for fossil fuel replacement in the short to medium term because they can use the existing infrastructure of vehicles and distribution with small modifications.

The goal of this project is to develop novel and advanced process systems engineering tools for addressing the problem of optimal design of biofuel plants under multiple criteria. The PI will undertake the following research tasks: a) Investigate superstructure optimization models to synthesize new flowsheet structures of biofuel plants; b) Develop simultaneous optimization models for the minimization of energy and freshwater consumption; c) Develop stochastic programming models to account for uncertainties in the feedstock; d) Develop bi-criterion optimization models to account for economics and life cycle analysis; e) Develop targeting models to determine maximum profit, minimum energy use, minimum freshwater consumption and minimum environmental impact. In order to achieve these objectives he intends to focus on the design of lignocellulosic bioethanol plants as the major case study. Other biofuels such as biodiesel will also be considered.
Examples of NSF Funding Details

**Intellectual Merit:**

In the design of biofuel plants a major contribution will be process synthesis models to systematically consider many design alternatives under a superstructure optimization framework. Aside from the capability of accounting for uncertainties in the feedstock, and of optimizing both profit and environmental impact using life cycle analysis under a bicriterion optimization framework, of significance will be targets for maximum profit, minimum energy use, minimum freshwater use and minimum environmental impact, which should provide useful indicators about the viability and desirability of these designs. In the area of process synthesis the simultaneous incorporation of water management (or water networks) together with heat integration in the optimization of the superstructure will also be studied as well as the development of solution methods of bi-criterion disjunctive optimization problems under uncertainty, a problem that has not been addressed before. These design capabilities will be demonstrated with a major case study, the design of lignocellulosic bioethanol plants. In terms of transformative research, perhaps the most significant aspect will be the development of modern and comprehensive synthesis and optimization tools for the design of biofuel plants, which have not had the benefit of being subjected to more systematic and thorough optimizations as have their petrochemical counterparts.
Examples of NSF Funding Details

**Broader Impact:**

A potential impact of the research in practice is the collaborations with Amyris and Cargill, both of whom will provide realistic data and case studies beyond the lignocellulosic ethanol case study, to help calibrate these design methodologies. The work will provide useful design concepts and tools that will improve the economic and environmental performance of biofuel plants, particularly in regard to energy and water usage, as suggested by preliminary results. These design capabilities should also help policymakers consider the best process designs when making comparisons among competing technologies. At the graduate level the PI intends to incorporate the findings of this research in a core graduate course on Process Systems Engineering. At the undergraduate level the PI intends to use as a senior design project the design of cellulosic ethanol. The results will be published as a CACHE Design case study, which will have wide distribution through CACHE as has been the case of previous design case studies, three of which the PI prepared. The preparation of the design case study for CACHE will be performed by two undergraduate students at Carnegie Mellon University. Another dimension of the project will be its dissemination through outreach activities with high schools in the Pittsburgh area. These activities, which will be performed through the Steinbrenner Institute for Environmental Education at Carnegie Mellon, will involve the PI and the graduate student visiting several high schools to explain the concepts of renewable biofuels and integrated process water networks.
Examples of NSF Funding Details

**PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH**


**BOOKS/ONE TIME PROCEEDING**


Gathering Information on Personal Publication History
Scopus: Finding Your Research Performance Statistics

Use the Scopus “Author search” functionality to quickly identify statistics associated with your work.
Check off Dr. Alan C. Leonard of FIT.
Scopus: Example of Citation Overview

31 Cited Documents from "Leonard, Alan C."  Save these documents to My list

Author h Index: 12

Documents

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Web of Science: Identifying Papers That You Have Authored

[Image of Web of Science search interface]

Index for selecting author name
Web of Science: Using Author Index

Search for "Leonard"

Locate and add the "Leonard" (i.e. "LEONARD ALAN C")

Add selection to search box.
Web of Science: Finding Your Research Performance Statistics
Web of Science: Example of Citation Report

Citation Report: 29
(From All Databases)
You searched for: AUTHOR: (LEONARD ALAN C) ...

This report reflects citations to source items indexed within All Databases.

Published Items in Each Year

Citations in Each Year

Results found: 29:
Sum of the Times Cited [T]: 847
Sum of Times Cited without self-citations [T]: 566
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1. CELL CYCLE-SPECIFIC CHANGES IN NUCLEOPROTEIN COMPLEXES AT A CHROMOSOMAL REPLICATION ORIGIN
   By: CASLIER, LR, BRIMWADE, JE, LEONARD, AC
   EMBO JOURNAL Volume: 14 Issue: 23 Pages: 5833-5841 Published: DEC 1 1995

2. Two discriminatory binding sites in the Escherichia coli replication origin are required for DNA strand opening by initiator DnaA-ATP
   By: Mooney, KC, Ryan, VT, Brimwaade, JE, et al.

Use the checkboxes to remove individual items from this Citation Report or restrict to items published between 1964 and 2014.