I. CHEMICAL PROCESSES

Project Title: DESIGN, CONSTRUCTION AND TEST OF A WATER PURIFIER SYSTEM

Name and Address of Principal Investigators: Isidro J. Reyes, et. al.
Description of the Project: In this system, the processes of chemical coagulation, and sedimentation, filtration, chlorination, dechlorination and aeration were used to purify shallow and deep well water for human consumption.
Project Cost and Source of Funding: ₱4,875.00
Cooperating Agencies: Gregorio Araneta University Foundation
Duration or Expected Date of Completion: 2nd sem. 1979-80

Project Title: DESIGN AND DEVELOPMENT OF AN APPARATUS FOR A BAGARES PROCESS SMALL SCALE COMMUNITY OIL REFINING PLANT

Principal Investigators: Prof. Rogelio Bandojo and
Mr. Julio Bagares, Sr.
MSU-IIT, Iligan City
Description of the Project: The objective of the project is to develop a small-scale community oil refining plant based on the experimental results obtained from a laboratory model of R.P. Patent 13154 S. 1979.
Project Cost: ₱313,155.00
Source of Funding: MSU-Iligan Institute of Technology
Date Started: August 30, 1981
Expected Date of Completion: August 30, 1980
Present Status: Materials needed for the equipment are being readied. Preliminary data have been obtained.

Project Title: STUDIES ON THE EFFECTIVITY OF THE CHEMICAL OPERATIONS OF THE BAGARES OIL REFINING PROCESS

Principal Investigator: Prof. Jovenal San Agustin
MSU-IIT, Iligan City
Description of the Project: The study is a verification of the effectivity of the chemical processes involved in the Bagares Edible Oil Refining (R.P. Pat. 13154 S. 1979).
Project Cost: ₱36,909.00
Source of Funding: MSU-Iligan Institute of Technology
Date Started: May 1, 1980
Expected Date of Completion: December 30, 1980
Present Status of the Project: Preliminary data have been taken. Vital equipment have been ordered.

Other Relevant Information: Comparison of the efficiency of lime and lye and temperature effects during neutralization are studied.

Project Title: LOW-COST DEVICE FOR EFFICIENT ETHYL ALCOHOL EXTRACTION

Principal Investigators: Prof. Rogelio Bandojo & Mr. Julio Bagares, Sr., MSU-IIT
Description of the Project: The invention consists of the following parts: Boiler, distilling tank, fractionating column, water separator, condenser and filter-clarifier column.
Project Cost: ₱15,000.00
Source of Funding: Personal
Date Started: June 1, 1980
Date Finished: September 5, 1980
Present Status of the Project: Patent Application is being made.
Other Relevant Information: The device does not need double distillation and can efficiently extract 98-99% ethyl alcohol from coconut and nipa toddy or "tuba". The device can be installed at a price of ₱25,000.00 and can process 500 liters of alcohol in 24 hours.

Project Title: PILOT PLANT SCALE STUDY OF THE PROCESS OF PRODUCING SULFATED MONOGLYCERIDE DETERGENT.

Name and Address of Principal Investigator: Plaridel H. Recato
National Institute of Science and Technology, Pedro Gil, Manila
Description of the Project: This study is being undertaken to determine the technical and economic feasibilities of processing detergents. The process involves 1) Trans-esterification of coconut oil with excess glycerine to produce monoglycerides in combination with di-and tri-glycerides; 2) sulfation of free hydroxy group; 3) neutralization and 4) formulation of the detergent mixture.
Project Cost and Source of Funding: ₱71,694.00, NIST

Project Title: PRODUCTION OF ALCOHOL FROM WASTE MATERIAL OF PINEAPPLE FRUIT

Name and Address of Principal Investigator: James F. Adams, FMS
Notre Dame of Marbel College, Koronadal, South Cotabato
Description of the Project: Utilization of pineapple waste in the production of alcohol and studies on the commercial feasibility of producing pineapple vinegar
Project Cost and Source of Funding: ₱12,000
Notre Dame of Marbel College
Cooperating Agencies: Graduate School, Notre Dame of Marbel College
Date Started: January 1, 1977
Date of Completion (for completed projects): April 31, 1979
Present Status of Project: completed
Other Relevant Information: Other aspects of this research such as temperature/enzyme studies are in process by students in the masteral programs of the NDMC graduate school.

Project Title: A STUDY ON THE BAGARES BATCH TYPE EDIBLE OIL REFINING PROCESS

Principal Investigator: Prof. Rogelio Bandojo
Description of the Project: This study is a documentation and authentication of the process and analysis of coconut edible oil of R.P. Patent No. 13154, s. 1979.
Project Cost: ₱15,000.00
Source of Funding: MSU-Iligan Institute of Technology
Date Started: June 2, 1980
Date of Completion: August 30, 1980
Other Relevant Information: A study of refined coconut oil from copra and "gata" using the Bagares Process showed: free fatty acids 0.07%; moisture content 0.09%; color .1/1. The product has an acceptable flavor, color and taste. Investment recovery 200%.

Project Title: A STUDY ON THE EDIBLE OIL STABILITY OF THE BAGARES PROCESS

Principal Investigators: Prof. Rogelio Bandojo
MSU-IIT, Iligan City

Description of the Project: This study will determine the microbiological, chemical changes in edible oil of R.P. Patent No. 13154 s. 1979 as a key factor for determining its stability.
Project Cost: ₱25,000.00
Source of Funding: MSU- Iligan Institute of Technology
Date Started: August 2, 1980
Expected Date of Completion: January 30, 1981
Other Relevant Information: Findings showed that the Bagares Process is economically viable. Free fatty acids, moisture content, color and flavor fall within the specification of the Food and Drug Administration. Stability of the oil is not known, thus the objective of this study.