

COLLEGE OF ENGINEERING

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
<b><u>CHEMICAL ENGINEERING</u></b>			
<ul style="list-style-type: none"> <li>Development Program on the Use of Ion-Exchange Resins for the Transesterification of Coconut Oil to Fatty Acid Methyl Esters</li> </ul>	Dr. Luis Razon Dr. Raymond Girard Tan	Senbel Corporation June 2007 – December 2007 <b>(NEW – ONGOING)</b>	Php 260,000.00
<ul style="list-style-type: none"> <li>Process Control on the Production of Carbon Nanotubes Using Natural Gas by Microwave Induced Plasma</li> </ul>	Dr. Joseph Auresenia Dr. Raymond Tan	AUN/SEED-Net October 2006 – March 2008 <b>(ongoing)</b>	US \$ 1,900.00 (US \$ 1,710.00 – Nov. 2006 Php 84,764.70 US \$190.00 – March 2007 Php 9,196.00)  US\$ 3,800.00 (US\$3,420.00 – May 2007 Php 161,800.20)  US\$ 1,710.00 – November 2007
<ul style="list-style-type: none"> <li>Ethanol Production from Biomass Using Reactive Distillation</li> </ul>	Dr. Servillano Olaño, Jr. (Retired First Term 2007-2008) Dr. Yolanda Brondia (Retired 2nd term 2007-2008)  Dr. Joseph Auresenia (assumed as principal investigator 2nd term 2007-2008)	AUN/SEED-Net October 2006 – March 2008 <b>(ongoing)</b>	US \$ 2,850.00 (US \$ 2,566.00 – Nov. 2006 127,196.62 US \$284.00 – March 2007 Php 13,745.60)  US\$5,700.00 (US\$5,130.00 – May 2007 Php 242,700.30)

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<ul style="list-style-type: none"> <li>Extraction of Essential Oil by Microwave Technology</li> </ul> <p>Sub-topics:</p> <p>Extraction of Essential Oil of Ginger by Microwave Assisted Process</p> <p>Chemical Composition and Antimicrobial Activity of the Essential Oils of Philippine Ginger and Garlic</p>	<p>Ms. Marylou Uy Dr. Florinda Bacani Ms. Wilheliza Baraoidan</p> <p>Ms. Marylou Uy Dr. Florinda Bacani</p> <p>Ms. Marylou Uy Ms. Wilheliza Baraoidan</p>	<p>AUN/SEED-Net</p> <p>September 2005 – March 2008 <b>(Completed August 2007, awaiting final installment of funds)</b></p> <p>October 2006 – March 2008 <b>(ongoing)</b></p>	<p>US \$ 1,900.00 (P 92,374.20 – Nov. 2005)</p> <p>US\$ 3,800.00 (US \$3,420.00 – May 2006 Php 174,933.00 US \$380.00 – March 2007 Php 18,392.00)</p> <p>US\$ 1,900.00 (US\$ 1,710.00 – May 2007 Php 80,900.10)</p> <p>US \$ 1,900.00 (US \$ 1,710.00 – Nov. 2006 84,764.70 US \$ 190.00 – March 2007 Php 9,196.00)</p> <p>US\$ 3,800.00 (US\$ 3,420.00 – May 2007 Php 161,800.20)</p>
<ul style="list-style-type: none"> <li>Treatment of an Industrial Wastewater with Sizeable Dissolved Solids (DS) and High Concentration of Chemical Oxygen Demand (COD) Using Coagulation and Flocculation</li> </ul>	<p>Ms. Wilheliza Baraoidan Dr. Pag-asa Gaspillo</p>	<p>AUN/SEED-Net</p> <p>September 2005 – March 2008 <b>(Completed August 2007, awaiting final installment of funds)</b></p>	<p>US \$ 1,900.00 (Php 92,374.20 – Nov. 2005)</p> <p>US \$ 3,800.00 – May 2006 Php 174,933.00 US \$380.00 – March 2007 Php 18,392.00</p> <p>US\$ 1,900.00 (US\$ 1,710.00 – May 2007 Php 80,900.10)</p>

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
<ul style="list-style-type: none"> <li>Removal of Arsenic from Geothermal Water by Using Adsorption</li> </ul> <p>Sub-topic:</p> <p>Removal of Arsenic from Simulated Groundwater Using Adsorption</p>	<p>Dr. Leonila Abella Dr. Pag-asa Gaspillo Dr. Joseph Auresenia</p> <p>Dr. Leonila Abella</p>	<p>AUN/SEED-Net September 2005 – March 2008 <b>(Ongoing)</b></p> <p><b>Completed April 2007</b></p>	<p>US \$ 2,850.00 (P 138,561.30 – Nov. 2005)</p> <p>US \$ 5,700.00 (P 262,399.50 – May 2006)</p> <p>US\$ 1,710.00 (Php 84,764.70 – Nov. 2006)</p> <p>US\$ 760.00 (Php 36,784.00- March 2007)</p> <p>US\$ 9,500.00 (US\$ 8,550.00 – May 2007 Php 404,500.50)</p> <p>US\$ 1,710.00 – November 2007</p>
<ul style="list-style-type: none"> <li>Degradation of Organic Pollutants Using Advanced Oxidation Process Assisted By Microwave Irradiation (AOP-MW)</li> </ul>	<p>Dr. Florinda Bacani Dr. Susan Roces</p>	<p>AUN/SEED-Net September 2005 – March 2008 <b>(Completed August 2007, awaiting final installment of funds)</b></p>	<p>US \$1,900.00 (Php 92,374.20 – Nov. 2005)</p> <p>US \$ 3,420.00 (Php 174,933.00 – May 2006)</p> <p>US \$380.00 (Php 18,392.00 – March 2007)</p> <p>US\$ 1,900.00 (US\$ 1,710.00 – May 2007 Php 80,900.10)</p>
<ul style="list-style-type: none"> <li>Facilitated Biological Method for Removal of Persistent Pollutants</li> </ul>	<p>Dr. Susan Gallardo Dr. Joseph Auresenia</p>	<p>SIDA – Asia Swedish Research Partnership Program Approved 3<sup>rd</sup> term SY 2003 – 2004 February 2004 – 2006 <b>(Ongoing - Extended until Dec 2007)</b></p>	<p>Year 2004 – PhP 286,184.25</p> <p>Year 2005 – PhP 89,577.80</p> <p>Year 2006 – PhP 265,787.80</p> <p>TOTAL: PhP 641,549.85</p>

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<p>Sub-topics: Degradation of trans-chlordane in water using combined AOP and biological process</p> <p>Degradation of water-soluble Pesticides</p> <p>Pilot Plant Project: Degradation of Pesticides</p>	<p>Dr. Susan Gallardo Dr. Joseph Auresenia</p> <p>Dr. Susan Gallardo Dr. Joseph Auresenia</p> <p>Dr. Susan Gallardo</p>	<p>(Completed)</p> <p>(On-going)</p> <p>(On-going)</p>	
<ul style="list-style-type: none"> <li>Development of Core Competencies in the areas of Biomedical and Clinical Engineering in the Philippines and Indonesia</li> </ul>	Dr. Julius Maridable	<p>Asia Link Program Approved 3<sup>rd</sup> term SY 2004 – 2005 April 2005 (start) (Ongoing)</p>	<p>(US \$9,208.61) P 512,643.31</p>
<ul style="list-style-type: none"> <li>Development of Sequential Photo-Oxidation and Biofilm Reactor for Persistent Organic Pollutants (POPs) Degradation: Focus on Polychlorinated Biphenyls (PCBs) (ARRPET Phase II)</li> </ul> <p>Projects:</p> <p>-Photodegradation of PCB 153 in Aqueous Solution Using UV/H<sub>2</sub>O<sub>2</sub>: Effect of Light Intensity</p> <p>-Bioremediation of Chlordane in Soil Matrix Employing Land Spread Technique</p>	<p>Dr. Susan Gallardo Dr. Leonila C. Abella Dr. Julius Maridable Dr. Joseph Auresenia</p> <p>Dr. Leonila Abella Dr. Susan Gallardo</p> <p>Dr. Joseph Auresenia Dr. Susan Gallardo</p>	<p>Swedish International Development Cooperation Agency (SIDA) Approved 1<sup>st</sup> term SY 2004 – 2005 June 2004 – 2007 (Ongoing)</p> <p>(Completed – August 2006)</p> <p>(Completed – August 2006)</p>	<p>Year 2004: PhP 2,585,770.40 Year 2005: PhP 2,398,408.47 Year 2006: PhP 2,275,285.56 Year 2007: PhP 2,070,804.32</p> <p>TOTAL: PhP 9,330,268.75 (SEK 1,334,411.00)</p>

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
-Toxicity Testing of Effluent from the UV/H <sub>2</sub> O <sub>2</sub> Treatment of Polychlorinated Biphenyls (PCBs) in Water Matrix	Dr. Leonila Abella Dr. Susan Gallardo	(Completed – August 2006)	
-Application of Fluidized Bed Biofilm Reactor in the Biodegradation of Polychlorinated Biphenyls Development of Windrow	Dr. Josephine Borja Dr. Joseph Auresenia Dr. Susan Gallardo	(Completed – April 2006)	
-Composting of Recycled Paper Mill Sludge: Effect of Nitrogen Amendment	Dr. Susan Gallardo	(Completed – Dec 2005)	
-Development of Windrow Composting of Recycled Paper Mill Sludge: Test for Biodegradability of Sludge	Dr. Susan Gallardo	(On- going)	
-Photolysis of chlordane in Soil & water matrix	Dr. Susan Gallardo	(completed - 2005)	
-Biodegradation of Chlordane in Water matrix (Natural and Enhanced)	Dr. Susan Gallardo Dr. Joseph Auresenia	(completed - 2005)	
Pilot Plant Project: Development of Sequential Photooxidation and Biofilm Reactor for Persistent Organic Pollutants Degradation	Dr. Susan Gallardo Dr. Joseph Auresenia	(On- going)	
Pilot Plant Project: Development of Windrow Composting for Recycled Paper Mill Sludge	Dr. Susan Gallardo	(On- going)	

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
<ul style="list-style-type: none"> <li>Extraction of Flavor from Spices/Herbs using Supercritical Carbon Dioxide</li> </ul> Physico-Chemical and Antimicrobial Properties of Essential Oil Extracted from Lemongrass ( <i>Cymbopogon citrates</i> ) and Patchouli ( <i>Pogostemon cablin</i> ) Using the Supercritical Carbon Dioxide	Dr. Julius Maridable Dr. Pag-Asa D. Gaspillo	Japan International Cooperation Agency (JICA) Approved 2 <sup>nd</sup> term SY 2004 – 2005 September 2004 (start) <b>(Ongoing)</b>  <b>(Completed – August 2006)</b>	JPY 500,000.00 (JFY 2004) US\$ 9,488.00 (JFY 2005) US\$ 7,600.00 (JFY 2006) (US\$ 6,840.00 – May 2006 Php 349,866.00 US\$ 760.00 – March 2007 Php 36,784.00) US\$ 2,850.00 (US\$ 2,565.00 – May 2007 Php 121,350.15)
<ul style="list-style-type: none"> <li>Sediment Oxygen Demand (SOD) and Biochemical Oxygen Demand (BOD) Characterization of Pasig River</li> </ul>	Dr. Pag-asa Gaspillo Mr. Lawrence Belo	Tokyo Institute of Technology July 2005 – December 2006 <b>(Ongoing)</b>	P 150,000.00
<ul style="list-style-type: none"> <li>Kinetic Study of Sharon and Anammox Process Reactions in Combined Sharon-Anammox System for Nutrient Removal</li> </ul>	Dr. Joseph Auresenia	Tokyo Institute of Technology July 2005 – December 2006 <b>(Ongoing)</b>	P 150,000.00
<ul style="list-style-type: none"> <li>Kinetics and Mechanism of the Degradation of PCB 153 Using UV/H<sub>2</sub>O<sub>2</sub> Process</li> </ul>	Dr. Leonila Abella Dr. Susan Gallardo	Tokyo Institute of Technology July 2005 – December 2006 <b>(Ongoing)</b>	P 100,000.00

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<ul style="list-style-type: none"> <li>CO<sub>2</sub> Fixation and Utilization by Conversion to Biomass Using an Integrated Absorption-Biofilm-Algal Photo-Bio-Algal Photo-Bioreactor System</li> </ul> <p>Sub-topics:</p> <p>CO<sub>2</sub> Fixation and Utilization by Conversion to Biomass Using Microalgal Photobioreactor</p> <p>Biomass Utilization by Membrane Separation: Production of Bioethanol from Molasses by Fermentation-Pervaporation</p>	<p>Dr. Joseph Auresenia Dr. Servillano Olaño, Jr.</p>	<p>Japan International Cooperation Agency (JICA) Approved 2<sup>nd</sup> term SY 2004 – 2005 October 2004 – March 2008 <b>(Ongoing)</b></p> <p><b>(Completed – August 2006)</b></p> <p><b>(Completed- August 2007, awaiting final installment of funds)</b></p>	<p>JPY 500,000.00 (JFY 2004)</p> <p>USD 9,500.00 (JFY 2005)</p> <p>US \$ 10,260.00 (Php 524,799.00 – May 2006)</p> <p>US \$1,140.00 (Php 55,176.00 – March 2007)</p> <p>US\$ 4,750.00 (US\$ 4,276.00 – May 2007 Php 202,297.56)</p>
<ul style="list-style-type: none"> <li>Microwave Pyrolysis of Medical Plastic Wastes</li> </ul> <p>Sub-topics:</p> <p>Design, Fabrication and Testing of Microwave Pyrolyzer for Low-Density Polyethylene and Polypropylene Medical Wastes</p> <p>Pyrolysis of PVC Medical Plastic Wastes by Microwave Dielectric Heating</p>	<p>Dr. Susan Roces Dr. Florinda Bacani</p>	<p>Japan International Cooperation Agency (JICA) Approved 2<sup>nd</sup> term SY 2004 – 2005 October 2004 – March 2008 <b>(Ongoing)</b></p> <p><b>(Completed – August 2005)</b></p> <p><b>(Completed – August 2006)</b></p>	<p>USD 1,784.00 (JFY 2004)</p> <p>USD 3,800.00 (JFY 2005)</p> <p>US \$ 1,900.00 (P 87,466.50 – May 2006)</p> <p>US \$ 4,275.00 (Php 211,911.75 – Nov. 2006)</p> <p>US \$ 665.00 (Php 32,186.00 – March 2007)</p> <p>US\$ 9,500.00 (US\$ 8,550.00 – May 2007 Php 404,500.50)</p> <p>US\$ 1,710.00 – November 2007</p>

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<ul style="list-style-type: none"> <li>Catalytic Processes for the Production of Syngas from Natural Gas</li> </ul> <p>Sub-topics: Preparation and Activity of Ni-MgO/ <math>\alpha</math>-Al<sub>2</sub>O<sub>3</sub> catalysts in the Partial Oxidation of Methane</p> <p>Preparation and Surface Characterization of Nickel Catalysts on Various Support Materials for Steam Reforming of Methane</p> <p>Modeling the Behavior of a Reverse-Flow Catalytic Autothermal Fixed Bed Reactor for Production of Synthesis Gas Using Methane Partial Oxidation</p> <p>The Kinetics of Methane Partial Oxidation Over Ni/MgO/<math>\alpha</math>-Al<sub>2</sub>O<sub>3</sub> Catalyst Using Spinning Basket Reactor</p> <p>Effect of Zirconia Types and Addition of Ceria on Ni/ZrO<sub>2</sub> Catalyst for Low Temperature Steam Reforming of Methane</p> <p>Effect of Catalyst Loading on Ni/ZnO<sub>2</sub> Activity for Methane Steam Reforming at Low Temperature</p> <p>The Effect of Various Support</p>	<p>Dr. Luis F. Razon Dr. Susan M. Gallardo Dr. Leonila C. Abella</p> <p>Dr. Luis Razon</p> <p>Dr. Susan Gallardo Dr. Leonila Abella</p> <p>Dr. Luis Razon</p> <p>Dr. Luis Razon</p> <p>Dr. Susan Gallardo Dr. Leonila Abella</p> <p>Dr. Leonila Abella Dr. Susan Gallardo</p>	<p>Japan International Cooperation Agency (JICA) Approved 2<sup>nd</sup> term SY 2003 – 2004 October 2004 – March 2008 <b>(Ongoing)</b></p> <p><b>(Completed August 2005)</b></p> <p><b>(Completed August 2005)</b></p> <p><b>(Completed August 2005)</b></p> <p><b>(Completed – August 2006)</b></p> <p><b>(Completed – August 2006)</b></p> <p><b>(Completed – August 2006)</b></p>	<p>JPY 1,713,840.00 (JFY 2003)</p> <p>JPY 900,000.00 (JFY 2004)</p> <p>USD 22,800.00 (JFY 2005)</p> <p>US \$ 20,900.00 (P 962,131.50 – May 2006)</p> <p>US \$ 1,710.00 (Php 84,764.70 – Nov. 2006)</p> <p>US \$2,280.00 (Php 110,352.00 – March 2007)</p> <p>US\$ 14,250.00 (US\$ 12,825.00 – May 2007 Php 606,750.75)</p>

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
<p>Materials on the Catalytic Activity of Nickel in the Low Temperature Steam Reforming of Methane</p> <p>Mass transfer effect on the kinetics of methane partial oxidation over Ni/MgO/<math>\alpha</math>-Al<sub>2</sub>O<sub>3</sub> catalyst by using a spinning basket reactor</p>	<p>Dr. Leonila Abella Dr. Susan Gallardo</p> <p>Dr. Luis Razon Dr. Susan Gallardo</p>	<p>(Completed – February 2006)</p> <p>(Completed – September 2007)</p>	
<ul style="list-style-type: none"> <li>Recovery Solvent from the Semiconductor Washings via Selective Separation by Molecular Affinity Modification</li> </ul> <p>Sub-topics:</p> <p>Vapor-Liquid-Equilibria of Acetone-Toluene-Water System in the Presence of Sodium Chloride and Cupric Chloride</p> <p>Applying Artificial Neural Network for Vapor-Liquid Equilibrium Prediction</p> <p>Vapor-Liquid-Liquid Equilibria of Acetone-Toluene-Water System with and without salt</p>	<p>Dr. Yolanda Brondial Dr. Servillano Olaño, Jr. Dr. Raymond Tan</p> <p>Dr. Yolanda Brondial Dr. Servillano Olaño, Jr.</p> <p>Dr. Raymond Tan Dr. Yolanda Brondial</p> <p>Dr. Yolanda Brondial Dr. Servillano Olaño, Jr.</p>	<p>Japan International Cooperation Agency (JICA) Approved 2<sup>nd</sup> term SY 2003 – 2004 October 2004 – March 2008</p> <p>(ongoing)</p> <p>(Completed – August 2005)</p> <p>(Completed – August 2006)</p> <p>(Completed August 2007, awaiting final installment of funds)</p>	<p>JPY 692,571.00 (JFY 2003) JPY 600,000.00 (JFY 2004) USD 5,700.00 (JFY 2005)</p> <p>US \$ 1,710.00 (P 87,466.50 – May 2006)</p> <p>US \$190.00 (Php9,196.00 – March 2007)</p> <p>US \$ 3,420.00 (Php 174,933.00 – May 2006)</p> <p>US \$380.00 (Php 18,392.00 – March 2007)</p> <p>US\$ 1,900.00 (US\$ 1,710.00 – May 2007 Php 80,900.10)</p>
Development and Validation of Microwave-Assisted Methods using DLSU Microwave Labstation	Dr. Florinda Bacani Dr. Susan Roces	Japan International Cooperation Agency (JICA) Approved 2 <sup>nd</sup> term SY 2007 – 2008 (NEW – ONGOING)	US\$ 1,710.00 – November 2007

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Supercritical Fluid Extraction (SCFE) for the Extraction of Certain Hazardous Wastes from Solid Sludges and Slurries	Dr. Julius Maridable Dr. Pag-asa Gaspillo	Japan International Cooperation Agency (JICA) Approved 2 <sup>nd</sup> term SY 2007 – 2008 <b>(NEW – ONGOING)</b>	US\$ 2,565.00 – November 2007
Optimization of the Operation of a Reverse-Flow Catalytic Reactor for the Production of Syngas from Natural Gas	Dr. Luis Razon Dr. Raymond Tan	Japan International Cooperation Agency (JICA) Approved 2 <sup>nd</sup> term SY 2007 – 2008 <b>(NEW – ONGOING)</b>	US\$ 1,71.000 – November 2007
Photocatalytic Technology for the Printing Industry's Environmental Concerns	Dr. Susan Gallardo Dr. Josephine Borja	Japan International Cooperation Agency (JICA) Approved 2 <sup>nd</sup> term SY 2007 – 2008 <b>(NEW – ONGOING)</b>	US\$ 2,565.00 – November 2007
<b><u>CESDR (Center of Engineering and Sustainable Development Research)</u></b>			
<ul style="list-style-type: none"> <li>Knowledge Center on Production Management</li> </ul>	Mr. Dennis Beng Hui Industrial Engineering Department	Private Enterprise Accelerated Resource Linkages (PEARL) April 1, 2007 – March 31, 2008 <b>(NEW – ongoing)</b>	P 2,280,000.00
<ul style="list-style-type: none"> <li>Optimization of Ethanol and Jatropha Fuel Cycles</li> </ul>	Dr. Raymond Tan Dr. Alvin Culaba	National Research Council of the Philippines (NRCP)  <b>(NEW – Approved, MOA being finalized))</b>	P 280,892.00
<ul style="list-style-type: none"> <li>Assessing Options to Implement Proof of Payment Provision in the Tax Code for Excise Taxes</li> </ul>	Mr. Dennis Beng Hui Industrial Engineering Department	USAID Economic Modernization Through Efficient Reforms and Governance Enhancement (USAID-EMERGE) November 2006 – June 2007 <b>(COMPLETED – JUNE 2007)</b>	Php 2,417,500.00

PROJECT TITLE	PROJECT DIRECTOR/ASSOCIATES	FUNDING AGENCY/PROJECT DURATION/STATUS	AMOUNT OF GRANT
<ul style="list-style-type: none"> <li>Post Graduate and Industrial Training in Sustainable Technology</li> </ul>	Dr. Alvin Culaba	European Commission (Asia-Link Program) January 1, 2006 – December 2008 <b>(ongoing)</b>	EURO 453,781.44  (P 2,232,862.47 – 2006)
<u>MECHANICAL ENGINEERING</u>			
<ul style="list-style-type: none"> <li>Center for Micro-Hydro Technology for Rural Electrification</li> </ul>	Mr. Godofredo Salazar	Japan International Cooperation Agency February 2003 – December 2005 <b>(Ongoing)</b>  <b>(extended – until September 2007)</b>	P 3,499,390.00 (FY 2003)  P 6,708,824.00 (FY 2004)  P 1,828,740.00 (FY 2005)
<ul style="list-style-type: none"> <li>Building an HVAC Instrumentation and Intelligent Controls Laboratory</li> </ul>	Mr. Carlos A. Lastrilla	American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) <b>(Ongoing)</b>	(US \$ 4,982.00)  P 274,010.00

Prepared by:

Noted by:

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