

**Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST - PCIEERD)**

**Program:** National Industry, Energy and Emerging Technology Sectors R&D Program

**Organizational Outcome:** Increased benefits to Filipinos from scientific knowledge and technological innovations for productivity and competitiveness

| Output/Outcome Indicators  | 1 <sup>st</sup> Quarter |                 | 2 <sup>nd</sup> Quarter |                 | 3 <sup>rd</sup> Quarter |                 | 4 <sup>th</sup> Quarter |                 |
|--|-------------------------|-----------------|-------------------------|-----------------|-------------------------|-----------------|-------------------------|-----------------|
|  | Targets                 | Accomplishments | Targets                 | Accomplishments | Targets                 | Accomplishments | Targets                 | Accomplishments |
| <b>Output Indicators</b>   |                         |                 |                         |                 |                         |                 |                         |                 |
| Number of projects funded  | 33                      | 41              | 33                      | 29              | 33                      | 48              | 31                      | 20              |
| Number of projects monitored   | 40                      | 64              | 50                      | 174             | 150                     | 56              | 90                      | 27              |
| Percentage of projects completed which are published in peer-reviewed journals, presented in national and/or international conferences, or with IP filed or approved |                         | 38%             |                         |                 | 50%                     | 16%             |                         |                 |
| <b>Outcome Indicators</b>  |                         |                 |                         |                 |                         |                 |                         |                 |
| Percentage of priorities in the Harmonized National R&D agenda (HNRDA) addressed   |                         | 100%            |                         |                 |                         |                 | 100%                    |                 |
| Number of partnerships with  | 10                      | 80              | 30                      | 7               | 30                      | 6               | 10                      | 5               |

| Output/Outcome Indicators                                       | 1 <sup>st</sup> Quarter |                 | 2 <sup>nd</sup> Quarter |                 | 3 <sup>rd</sup> Quarter |                 | 4 <sup>th</sup> Quarter |                 |
|---|-------------------------|-----------------|-------------------------|-----------------|-------------------------|-----------------|-------------------------|-----------------|
|   | Targets                 | Accomplishments | Targets                 | Accomplishments | Targets                 | Accomplishments | Targets                 | Accomplishments |
| public and private stakeholders and international organizations |                         |                 |                         |                 |                         |                 |                         |                 |

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 Executive Director  


**List of Funded Projects  
(January – December 2019)**

|   | Project Title   | Implementing Agency   |
|---|---|---|
| <b>PCIEERD-GIA Projects</b>   |   |   |
| 1   | Angular Goos-Hänchen Shift: An Optical Phenomena for Ultra-Thin Film Thickness Measurement  | UP Diliman  |
| 2   | Establishing an Environment-Friendly Chromium Plating Process Using Generation Ionic Liquids  | UP Diliman  |
| <b><i>Geospatial Monitoring System for High Value Projects funded by DBM Program</i></b>  |   |   |
| 3   | Project 1. Monitoring and Assessment of Planting Activities and other Applications (MAPA2)  | UP Diliman  |
| 4   | Project 2. Remote Assessment for Irrigation Networks (RAIN)   | UP Diliman  |
| 5   | Validation and Turnover of the Hybrid Electric Train (HET)  | Metals Industry Research and Development Center (MIRDC)       |
| 6   | Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring   | De La Salle University (DLSU)                                 |
| <b><i>Comprehensive Evaluation of Critical Infrastructures and Construction Raw Materials in the Philippines Using Concrete Petrography</i></b>   |   |   |
| 7   | Project 1. Concrete Petrography as a Quality Assessment Tool of Hardened Concrete from Lifeline Structures in the Philippines                                       | UP Diliman  |
| 8   | Project 2. Geological, Chemical and Physical Evaluation of Concrete Raw Materials Used in Critical Philippine Infrastructures                                       | UP Diliman  |
| 9   | CATfish: A Modular Mini-Autonomous, Underwater Vehicle (AUV) initially submitted as (Remotely operated underwater vehicle (ROV-One))                                | UP Diliman  |
| <b><i>Analyzing CORDEX - SEA Regional Climate Simulations for Improved Climate Information over the Philippines: SST Influence, Variability and Extremes, Tropical Cyclone Activity</i></b> |   |   |
| 10  | Project 1. Analysis of the Influence of Sea Surface Temperature Representation in Downscaled Regional Climate Using the SEACLID/CORDEX – Southeast Asia Simulations | Manila Observatory  |
| 11  | Project 2. Multi-temporal and Extremes Analysis of Modeled Climatology over the Philippines in the SEA CORDEX Domain  | Manila Observatory  |
| 12  | Project 3. Detecting Tropical Cyclones in a Downscaled Regional Climate Model for CORDEX – SEA  | Manila Observatory  |
| 13  | Liquefaction Hazard Assessment for Resilient Schools in GMMA: A Liquefaction Probabilistic Model using Non-Invasive Geophysical Techniques and Limited Probe Hole   | Philippine Institute of Volcanology and Seismology (PHIVOLCS) |
| <b><i>PH UK Newton Agham Joint Cooperation Program on Understanding the Impacts of Hydrometeorological Hazards in South East Asia</i></b>   |   |   |
| 14  | SCaRP: Simulating Cascading Rainfall-triggered Landslide Hazards in the Philippines   | Mapua Institute of Technology (MIT)                           |
| 15  | Catchment Susceptibility to Hydrometeorological Events: Sediment Flux and Geomorphic Change as Drivers of Flood Risk in the Philippines                             | UP Diliman  |

|    | Project Title  | Implementing Agency  |
|----|--|--|
| 16 | Philippines Groundwater Outlook (PhiGO)  | Ateneo De Manila University (ADMU)                                   |
| 17 | Philippines - Quantitative Lahar Impact and Loss Assessment under changing Land Use and Climate Scenarios  | Philippine Institute of Volcanology and Seismology (PHIVOLCS)        |
|    | <b><i>Development of a fixed wing short take-off and landing (STOL) unmanned aerial vehicle (UAV) for disaster risk reduction and management</i></b>   |  |
| 18 | Project 1. Design and fabrication of an airframe for a medium-range, short take-off and landing UAV  | FEATI University   |
| 19 | Project 2. Development of a Flight Controller for a Modular UAV System   | De La Salle University (DLSU)  |
| 20 | Project 3. Cooperative UAV-UGV Missions and Applications with Custom Communications and Imaging Capabilities   | Ateneo De Manila University (ADMU)                                   |
| 21 | Mapping of active offshore faults for resilient coasts   | UP Diliman   |
| 22 | Specific Earthquake Ground-Motion to help enhance the seismic resiliency of residential and medium-to-high rise buildings in Metro Cebu and Metro Davao  | Philippine Institute of Volcanology and Seismology (PHIVOLCS)        |
| 23 | Specific Earthquake Ground-Motion Levels to Help Increase the Seismic Resiliency of Government Infrastructures, Residential and Medium -to-High Rise Buildings in Pangasinan, Tarlac, Metro Iloilo-Guimaras, Cauayan City, Butuan City and Mati City | Philippine Institute of Volcanology and Seismology (PHIVOLCS)        |
| 24 | Master of Research and Development Management  | UP Open University   |
|    | <b><i>3R Approach to Sustainable Management of Nickel Laterite Ore Mining</i></b>  |  |
| 25 | Project 1. Utilization of Nickel Laterite Ore rock (low grade) for various applications: Acid Mine Drainage treatment and Carbon Sequestration   | De La Salle University (DLSU)  |
| 26 | Project 2. Recycling and reprocessing of siltation sediments from selected nickel laterite mining areas in the Philippines as raw materials for the synthesis of iron-based novel adsorbents   | Central Mindanao University (CMU)                                    |
| 27 | Project 3. Recovery of Nanominerals from Silt for Various Ceramic Applications   | Mindanao State University-Iligan Institute of Technology (MSU-IIT)   |
| 28 | Project 4. Recycling of silt and spent residue from reprocessing as raw materials for geopolymer composite   | Central Mindanao University (CMU)                                    |
| 29 | Pilot Scale Production of Nickel Pig Iron from Low Grade Laterite Ores   | Mines and Geosciences Bureau (MGB)                                   |
|    | <b><i>Processing of Bio-based Polyols and Polyurethanes for Industrial Applications Program</i></b>  |  |
| 30 | Project 1. Production of Bio-based Polyols from Lignocellulosic Biomass  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 31 | Project 2. Development of Polyurethane-based Packing Materials and Anti-corrosive Coatings from Vegetable Oil  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 32 | Development of Design Prototypes for Government Agencies' Uniforms to Promote Mainstreaming of Natural Fibers and Local Weaves   | Philippine Textile Research Institute (PTRI)                         |

|    | Project Title   | Implementing Agency   |
|----|---|---|
| 33 | Enhancement, Field Validation and Market Readiness Detection of DNA-based Nanobiosensor for the <i>E. coli</i> , <i>E. coli</i> 0157:H7 and <i>Salmonella enterica</i> in Food, Feed and Farm Produce | National Institute of Molecular Biology and Biotechnology (NIMBB) |
|    | <b>Higher Education Institution Readiness for Innovation &amp; Technopreneurship (HEIRIT) Development Program for Starting TBIs</b>   |   |
| 34 | Establishment of DOST-T.I.P. Technopreneurship and Innovation Center  | Technological Institute of the Philippines (TIP)                  |
| 35 | Establishment of the DOST-Bicol University Technology Business Incubation (DOST-BU TBI) Center for Bicol Region   | Bicol University (BU)   |
| 36 | Technology Business Incubator Establishment at Saint Louis University (SLU) Technohub   | Saint Louis University  |
| 37 | Establishment of TBI Center at Miriam College - Henry Sy, Sr. Innovation Center   | Miriam College  |
| 38 | Establishment of TBI center for the University of the Cordilleras   | University of the Cordilleras                                     |
| 39 | Establishment of DOST-BuISU BARAS TBI (Business Assistance for Regional Acceleration and Sustainability Technology Business Incubator)  | Bulacan State University  |
| 40 | Establishment of AgiLAB: The USEP Technology Business Incubation Facility and Services for IoT, Industrial Technology & Systems Application Development   | University of Southeastern Philippines                            |
| 41 | Establishment of the DOST-TUPV HIVE (Hub for Innovation and Value Engineering)  | Technological University of the Philippines Visayas (TUPV)        |
| 42 | DOST-BIZNEST (Business Incubation Zone for Novel and Sustainable Technology Enterprises)  | Cagayan State University  |
| 43 | Support for the Establishment of Technology Business Incubator (TBI) in Holy Angel University   | Holy Angel University (HAU)                                       |
| 44 | Establishment of DOST - Samar State University Technology Business Incubator  | Samar State University (SSU)                                      |
| 45 | Establishment of the Sabatan: The Nueva Vizcaya State University Technopreneurs Hub   | Nueva Vizcaya State University (NVSU)                             |
| 46 | UMASENSO: Establishment of University of Mindanao Technology Business Incubation Facility and Services for Environmental Solutions  | University of Mindanao  |
| 47 | Establishment of the DOST-CITU TBI Wildcat Innovation Labs  | Cebu Institute of Technology University, Inc.                     |
| 48 | Establishment of the Dost Technology Business Incubation in UP Mindanao   | UP Mindanao   |
| 49 | Technology Business Incubator Establishment at Siliman University   | Siliman University  |
| 50 | Establishment of DOST-TOMASinno Center TBI  | University of Santo Tomas (UST)                                   |
| 51 | Technology Business Incubator at De La Salle - Science and Technology Complex   | De La Salle University (DLSU)                                     |
| 52 | Enhancing Operational Capability of Palawan International Technology Business Incubator (PITBI)   | Palawan State University  |
|    | <b>Smart Plant Production in Controlled Environments (SPICE)</b>  |   |
| 53 | Project 1. Standalone Urban Farm  | UP Diliman  |

|   | Project Title   | Implementing Agency   |
|---|---|---|
| 54  | Project 2. Sensor-based Monitoring and Analytics for Smart Hydroponics (SMASH)  | UP Diliman  |
| 55  | Project 3. Establishment of Soilless Culture Technology for Urban Food Production   | UP Diliman  |
| 56  | Project 4. Ex-Situ Conservation through Micropropagation Cryopreservation of Native Plant Species   | UP Diliman  |
| <b><i>μC-IC: Design of Microcontroller Integrated with Energy Harvesting and Power Management</i></b> |   |   |
| 57  | Project 1. Development of Microprocessor for Wireless Sensor Network Application  | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 58  | Project 2. Power Management Unit using Low Drop-out Regulator and Switched Capacitor DC-DC Converters   | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 59  | Project 3. Design of Indoor Light Energy Harvesting for Wireless Sensor Network Applications  | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 60  | Generalized Automated Microfluidics and Micro-actuator Assembly (GAMMA)   | UP Diliman  |
| 61  | Ultrafast MBE-Grown Terahertz Photoconductive Antenna Devices   | UP Diliman  |
| 62  | Fabrication of Highly C-axis Oriented YBCO Superconducting Thin Films by Sedimentation Deposition   | UP Diliman  |
| 63  | Self-Healing Materials Based on Cyclodextrin and Ferrocene Self-Assembly towards Formulation of Coatings  | Ateneo De Manila University (ADMU)  |
| 64  | Fabrication of Metal Oxide Thin Films for Optical Coatings with Plasma Assisted Deposition Using a Plasma Enhanced Chemical Vapor Deposition (PECVD) System                           | UP Diliman  |
| 65  | Flood Risk Assessment for Mitigation and Effective Response (FRAMER) of Riverine Towns in Selected River Basins in Cavite, Batangas, and Quezon Provinces using Most Recent LiDAR DEM | Mapua Institute of Technology (MIT)   |
| 66  | Enhancing the Hydrometeorological Hazards Monitoring and Risk Assessment Capabilities of PAGASA through the Adoption and integration of NOAA Operating Systems                        | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 67  | Techno - Economic Feasibility Study of Micro-Grid in a Remote Community   | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 68  | Research and Development Project to Rehabilitate and Enhance Productivity in Lahar and Ash-Laden Areas in Central Luzon   | Central Luzon State University (CLSU)   |
| <b><i>Synergistic Capacity Advancement for the Management of Laguna Lake: SCALE</i></b>               |   |   |
| 69  | Project 1. Antibiotics, Endocrine Disruptors and Heavy Metals in Laguna Lake Water: Impacts on Food and Water Security  | UP Diliman  |
| 70  | Project 2. Microbial Source Tracking in Selected Tributaries of Laguna de Bay   | UP Diliman  |

|    | Project Title  | Implementing Agency   |
|----|--|---|
| 71 | Project 3. TRACe Fish – Trace oRganics and metAls in Commodity Fish: Method optimization, extent of contamination and health risk due to fish intake                           | UP Diliman  |
|    | <b><i>Natural Dyes and Colorants R&amp;D Program</i></b>   |   |
| 72 | Project 1. Commercial Scale Verification of Natural Dyes for Textiles  | Philippine Textile Research Institute (PTRI)                        |
| 73 | Development, Standardization, and Characterization Studies of Tupig, Bukayo, and Bibingka – Region I Native Delicacies   | Pangasinan State University (PSU)                                   |
| 74 | Modular Multi-Industry Innovation Center for Oils, Blends, and Sauces  | Industrial Technology Development Institute (ITDI)                  |
| 75 | Standards & Testing Automated Modular Platform (STAMP)   | UP Diliman  |
| 76 | Enhancing the Applicability of Vertical Helophyte Filter Systems for Small Communities, Local MSMEs and Public Entity  | DOST Region XI  |
| 77 | Development of a Wastewater Filtration System using Indigenous Materials   | Mariners Polytechnic Colleges Foundation of Canaman (CAM SUR), Inc. |
| 78 | Financial Support to Regional Consortia Activities   | Consortia Member Institutions                                       |
| 79 | Development of Municipal e-Governance Systems through ICT  | Camarines Sur Polytechnic Colleges (CSPC)                           |
| 80 | Establishment of ISO17034:2016 Quality Management System and Development of Fish Reference for Proximate, Minerals and Cholesterol Analysis                                    | Food and Nutrition Research Institute (FNRI)                        |
| 81 | Human Resource Development Program   | Multiagency   |
| 82 | Young Innovators Program   | Multiagency   |
| 83 | Financial Assistance for Information Dissemination and Promotion   | Multiagency   |
|    | <b><i>Fishery By-product Processing for Food Application: Towards Commercialization</i></b>  |   |
| 84 | Project 1. Collagen and Gelatin from By-products of Fish Processing Industry   | Central Luzon State University (CLSU)                               |
| 85 | Project 2. Fish Oil, Proteases and Protein Hydrolysate from By-products of Fish Processing   | Central Luzon State University (CLSU)                               |
| 86 | Metrology and PDEA: Correct Quantity, Right Decision   | Industrial Technology Development Institute (ITDI)                  |
| 87 | Design and Improvement of Gong Fabrication Processes Through S&T Intervention  | Metals Industry Research and Development Center (MIRDC)             |
| 88 | Pilot-Scale Production of Spray-Dried Powder Dextran and High Fructose Syrup using Whole Cell ( <i>Leuconostoc mesenteroides</i> isolates) ITDI Fermentation Technology        | Industrial Technology Development Institute (ITDI)                  |
| 89 | Optimization of Operational Parameters and Characterization of Tailings and other Ore Bodies in Support to the Gold-Copper Mineral Processing Pilot Plant in Compostela Valley | DOST Region XI  |
| 90 | Value-Added Product from Fruit Processing Wastes: Acetic Acid for Potential Industrial Application   | UP Mindanao   |
| 91 | Impact Assessment of the Department of Science and Technology (DOST) Small Enterprise Technology Upgrading Program (SETUP)   | Development Academy of the Philippines (DAP)                        |

|     | Project Title   | Implementing Agency   |
|-----|---|---|
|     | <b><i>Natural Fibers as Nanostructured Scaffolds for Biomedical Applications</i></b>  |   |
| 92  | Project 1. Nanofibrous Scaffolds from Natural Biomaterials for Tissue Engineering   | Industrial Technology Development Institute (ITDI)                      |
| 93  | Project 2. Nanostructured Scaffolds from Natural Fibers as Platforms for Stem Cell Growth and Differentiation                           | UP Diliman  |
| 94  | Technology Interventions for Mathematical Reasoning, Statistical Thinking and Assessment  | Ateneo De Manila University (ADMU)                                      |
|     | <b><i>Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry</i></b>  |   |
| 95  | Project 1. Physico-chemical factors which affect the quality of VCO   | Ateneo De Manila University (ADMU)                                      |
| 96  | Project 2. Investigation of the microbiological factors which affect the quality of VCO   | Ateneo De Manila University (ADMU)                                      |
| 97  | Project 3. Investigation of factors affecting the sensory properties and acceptability of VCO   | UP Diliman  |
| 98  | Project 4. Assessment of VCO Production: GMP and HACCP  | Ateneo De Manila University (ADMU)                                      |
| 99  | Project 5. Water Activity and Percent Moisture: Effect on VCO Stability   | Ateneo De Manila University (ADMU)                                      |
| 100 | Sustainable Wastewater Treatment Systems with Nutrient (SWAN) Recovery  | De La Salle University (DLSU)   |
|     | <b><i>Funding Assistance for Spin-off and Translation of Research in Advancing Commercialization (FASTRAC) Program</i></b>              |   |
| 101 | Technology and Market Validation for Universal Structural Health Evaluation and Recording (USHER) System                                | Mapua Institute of Technology (MIT)                                     |
| 102 | CharM - Charging in Minutes Spinoff Project - Technology Development for Manufacturability and Open-water Market Validation             | UP Diliman  |
| 103 | Product and Market Validation for a Semi-Automated Reef Fish Census System  | UP Diliman  |
| 104 | Commercial Development of Production, Application and Full Market Study of Monascus Red Colorant  | National Institute of Molecular Biology and Biotechnology, UP Los Baños |
| 105 | Product Testing and Market Validation of Marine Nanocoat for Anticorrosion, Antirbarnacle, AntiUV, coating for ship vessel applications | De La Salle University (DLSU)   |
| 106 | CATCH-ALL: Vision-Based Artificial Intelligence Analytics Software Development for Traffic and Transport Applications                   | De La Salle University (DLSU)   |
| 107 | Open Water Validation and Product Enhancement of Smart Surface  | UP Diliman  |
| 108 | Filipinnovation Entrepreneurship Corps (FEC) 2: Enabling Researchers to Assess Commercial and Societal Value of their Research          | De La Salle University (DLSU)   |
|     | <b><i>IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)</i></b>                                     |   |
| 109 | Assistance in the Commercialization of DOST Funded Technologies in De La Salle University   | De La Salle University (DLSU)   |
| 110 | Assistance in the Commercialization of DOST Funded Technologies in Caraga State University  | Caraga State University (CarSU)   |

|     | <b>Project Title</b>  | <b>Implementing Agency</b>                         |
|-----|---|--|
| 111 | Enhancement of Mapua's Technology Transfer Process and Structure  | Mapua Institute of Technology (MIT)                |
| 112 | Rubber and Waste Plastics as Reinforcement Additives for Asphalt Binder-Based Pavement Infrastructures  | UP Los Baños (UPLB)                                |
| 113 | Novel Material as Anode and Cathode Electrode for Power Generator AI-Air Reactor  | Polytechnic University of the Philippines (PUP)    |
| 114 | Fire Check: Urban Fire Hazard Mapping and Fire Spread Modeling  | UP Cebu  |
| 115 | The Use of Radon Technique in Mapping Geological Faults in the Philippines  | Philippine Nuclear Research Institute (PNRI)       |
| 116 | Geospatial Assessment and Modelling of Urban Heat Islands in Philippine Cities (GUHeat)   | UP Diliman   |
| 117 | Remote Sensing and Data Science: DATOS Helpdesk   | Advanced Science and Technology Institute (ASTI)   |
|     | <b><i>GeoSafer Mindanao Program (ZAMBASULTA, Northern Mindanao/ Cotabato, Agusan, Western Mindanao and Southeastern Mindanao)</i></b>                   |  |
| 118 | Project 3. Geo-SAFER Agusan – Systematic Assessment of Flood Effects and Risks in the Agusan River Basin, Caraga Region, Mindanao, Philippines          | Caraga State University (CarSU)                    |
| 119 | Polyhydroxyalkanoate (PHA) Production from Agricultural Residues  | UP Los Baños                                       |
| 120 | From Pest to Valued Commodity: Black-Chin Tilapia ( <i>Sarotherodon melanotheron</i> ) for the Development of Surimi-Based Products Processing          | Bataan Peninsula State University (BPSU)           |
| 121 | Kapok fibers absorbent with customizable hydrophobicity/hydrophilicity for oily water and wastewater treatment  | UP Los Baños                                       |
| 122 | Capability Building on Energy Efficiency and Conservation (EE&C) for State Universities and Colleges (SUCs) in Six (6) Regions as Demonstration Sites   | Industrial Technology Development Institute (ITDI) |
| 123 | Image Mapping of Energy Conversion Efficiency and other Parameters Across Solar Cell Active Areas using Photoexcitation and Photothermal Effects        | University of San Carlos (USC)                     |
| 124 | Secured Command and Control Communication Link System   | Holy Angel University (HAU)                        |
| 125 | Production of Ready-to-Buy (RTB) Natural Textiles and Dyes in Support of Increasing Utilization of Local and Indigenous Philippine Textile              | Philippine Textile Research Institute (PTRI)       |
| 126 | Project Management/Assessment and Policy Development Program  | Multiagency  |
| 127 | Characterization and Resources Estimation of Valuable Rare Earth Elements (REEs) and Natural Radionuclides in the Philippine Coal and Feldspar Deposits | Philippine Nuclear Research Institute (PNRI)       |
| 128 | Technology Marketing Package for Juan and Juana   | Food and Nutrition Research Institute (FNRI)       |
| 129 | Mapping of offshore active faults for resilient coasts  | UP Diliman   |
|     | <b><i>Infrastructure Development Program (IDP)</i></b>  |  |
| 130 | Establishment of Intelligent Systems Laboratory   | Mindanao State University – General Santos City    |

|     | <b>Project Title</b>   | <b>Implementing Agency</b>                   |
|-----|--|--|
| 131 | Establishment of the MSU - Marawi Optoelectronics Science Laboratory   | Mindanao State University – Marawi           |
| 132 | Establishment of the Additive Manufacturing Center for Industrial Ceramics (AMCERAM)   | Adamson University                           |
| 133 | Characterization of Tailings and Optimization of the Gold-Copper Pilot Plant in Jose Panganiban, Camarines Norte                       | DOST Region V                                |
| 134 | Development of Low Heat and Low Humidity (LH) <sub>2</sub> Drying System for DOST Malnutrition Reduction Program (DOST-MRP) Facilities | Food and Nutrition Research Institute (FNRI) |
| 135 | Resource Assessment of REEs in the Porphyry and Epithermal Cu-Au-Mo Deposits in Nueva Vizcaya  | Ateneo de Manila University (ADMU)           |
| 136 | A Mobile-web Bidirectional Neural Machine Translation System for Filipino and Cebuano  | University of the Immaculate Conception      |
| 137 | Enhancement of Transportation Management Software (E-TraMS)  | UP Diliman                                   |
| 138 | Sustainable Technology - Assisted Route Planning for Region VI (STARPLAN-VI)   | De La Salle University (DLSU)                |

**List of Monitored Projects  
(January – December 2019)**

|  | <b>Project Title</b>  | <b>Implementing Agency</b>                         |
|--|---|--|
| 1  | ADMATEL Expansion and Business Continuity   | Industrial Technology Development Institute (ITDI) |
| 2  | Development of Novel Materials as Emitters and Detectors for (Sub)-Terahertz Time-Domain Spectroscopy Carrier Dynamic Studies                               | UP Los Baños                                       |
| 3  | Application of Predictive Data Analytics on Multivariate Analysis of Methamphetamine-HCl Chemical Fingerprints  | Industrial Technology Development Institute (ITDI) |
| 4  | Fabrication of Metal Oxide Thin Films for Optical Coatings with Plasma Assisted Deposition Using a Plasma Enhanced Chemical Vapor Deposition (PECVD) System | UP Diliman   |
| <b><i>Smart Plant Production in Controlled Environments (SPICE)</i></b>                                    |   |  |
| 5  | Project 1. Standalone Urban Farm  | UP Diliman   |
| 6  | Project 2. Sensor-based Monitoring and Analytics for Smart Hydroponics (SMASH)  | UP Diliman   |
| 7  | Project 3. Establishment of Soilless Culture Technology for Urban Food Production   | UP Diliman   |
| 8  | Project 4. Ex-Situ Conservation through Micropropagation Cryopreservation of Native Plant Species   | UP Diliman   |
| 9  | Generalized Automated Microfluidics and Micro-actuator Assembly (GAMMA)   | UP Diliman   |
| 10   | Electrochemical and Quantum Mechanical Investigation of Various Small Molecule Organic Compounds as Corrosion Inhibitors in Mild Steel                      | De La Salle University (DLSU)                      |
| 11   | Angular Goos-Hänchen Shift: An Optical Phenomena for Ultra-Thin Film Thickness Measurement  | UP Diliman   |
| 12   | Fabrication of Highly C-axis Oriented YBCO Superconducting Thin Films by Sedimentation Deposition   | UP Diliman   |
| 13   | Self-Healing Materials Based on Cyclodextrin and Ferrocene Self-Assembly towards Formulation of Coatings  | Ateneo De Manila University (ADMU)                 |
| <b><i>Hard Coating Thin Film Synthesis Using DC and RF Magnetron Sputtering via Gaseous Discharges</i></b> |   |  |
| 14   | Project 1. Development of Direct Current (DC) Magnetron Plasma System for Ti-Al-C Thin Film Synthesis   | Ateneo De Manila University (ADMU)                 |
| 15   | Project 2. Development of Radio Frequency (RF) Plasma System for Ti-Al-N Thin Film Synthesis  | UP Diliman   |
| 16   | Ultrafast MBE-grown Terahertz Photoconductive Antenna Devices   | UP Diliman   |
| 17   | Establishing an Environment-Friendly Chromium Plating Process Using Generation Ionic Liquids  | UP Diliman   |
| 18   | Enhancing Man-Machine Interaction through Intelligent Conversational Agents   | De La Salle University (DLSU)                      |

|    | <b>Project Title</b>   | <b>Implementing Agency</b>   |
|----|--|--|
| 19 | Bomb Removal Automated Vehicle (BRAVE)   | De La Salle University (DLSU)  |
|    | <b><i>EPDC as Platform for Innovation and Collaboration (EPIC)</i></b>   |  |
| 20 | Project 1. Electronics Product Development Center Upgrade and Operation  | Advanced Science and Technology Institute (ASTI)                     |
| 21 | Project 2. Electronics Product Inclusive Innovation Center (EPIIC)   | Advanced Science and Technology Institute (ASTI)                     |
|    | <b><i>μC-IC: Design of Microcontroller Integrated with Energy Harvesting and Power Management</i></b>  |  |
| 22 | Project 1. Development of Microprocessor for Wireless Sensor Network Application   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 23 | Project 2. Power Management Unit using Low Drop-out Regulator and Switched Capacitor DC-DC Converters  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 24 | Project 3. Design of Indoor Light Energy Harvesting for Wireless Sensor Network Applications   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 25 | Development of Error Resilient Joint Source-Channel Wireless Video Transmission System for High Efficiency Video Coding (HEVC) Standards over Wireless Channel | University of Santo Tomas (UST)                                      |
| 26 | Marayum - A Community-built, Mobile Phone Based, Online Web Dictionary for Philippine Languages  | UP Diliman   |
| 27 | Development of Data Analytics-Ready Info Unified System (DARIUS) for Agile Delivery of Regional Services   | DOST Region IV-A   |
| 28 | Fringe-area Data Access by Transient Altitude Provision  | De La Salle University (DLSU)  |
| 29 | One Click: Android/Web-based Student Response and Understanding Visualizer   | Mapua Institute of Technology (MIT)                                  |
| 30 | Environmental, Health and Safety Research in the Risk Assessment of Nanomaterials (Phase 1)  | Industrial Technology Development Institute (ITDI)                   |
| 31 | Ionic Liquid Assisted Electrospinning of Conductive Nanofibers as Solid Polymer Electrolyte/Separator Membrane of Solid-State Supercapacitor                   | UP Diliman   |
| 32 | Up-Scaled Solution-Phase Synthesis of Metal Nanowires and its Application in Transparent Metal Nanowire Touch Panel  | UP Diliman   |
| 33 | Development of a Passive Neutron Spectrometry System (PNSS)  | Philippine Nuclear Research Institute (PNRI)                         |
| 34 | Development of a Raman Microscopy and Spectroscopy (RMS) Setup   | UP Diliman   |
| 35 | Optical trap-mediated interaction between cancer cells and elucidated compounds from vegetable extracts in PEMF  | De La Salle University (DLSU)  |
| 36 | Binary Gels - Rheology of Two-component Biopolymer Hydrogels Investigated Using Optical Tweezers and Non-Linear Rheometry                                      | University of San Carlos (USC)                                       |

|   | <b>Project Title</b>  | <b>Implementing Agency</b>                       |
|---|---|--|
| 37  | Synthetic Aperture Radar (SAR) and Automatic Identification System (AIS) for Innovative Terrestrial Monitoring and Maritime Surveillance  | Advanced Science and Technology Institute (ASTI) |
| 38  | Establishment of Niche Center on Environmental Informatics for Central Visayas  | UP Cebu  |
| 39  | Flood Risk Assessment for Mitigation and Effective Response (FRAMER) of Riverine Towns in Selected River Basins in Cavite, Batangas, and Quezon Provinces using Most Recent LiDAR DEM | Mapua Institute of Technology (MIT)              |
| <b><i>Geospatial Monitoring System for High Value Projects</i></b>  |   |  |
| 40  | Project 1. Monitoring and Assessment of Planting Activities and other Applications (MAPA2)  | UP Diliman                                       |
| 41  | Project 2. Remote Assessment for Irrigation Networks (RAIN)   | UP Diliman                                       |
| 42  | Geospatial Assessment and Modelling of Urban Heat Islands in Philippine Cities (GUHeat)   | UP Diliman                                       |
| <b><i>Sustained Support for Local Space Technology &amp; Applications Mastery, Innovation and Advancement (STAMINA4Space)</i></b>     |   |  |
| 43  | Project 1. Optical Payload Technology In-depth Knowledge Acquisition and Localization (OPTIKAL)   | UP Diliman                                       |
| 44  | Project 2. Building PHL-50: Localizing the Diwata-1 and Diwata-2 Bus Systems as the Country's Space Heritage 50-kg Microsatellite Bus (LoKAL)   | UP Diliman                                       |
| 45  | Project 3. Space Science and Technology Proliferation through University Partnerships (STEP-UP)   | UP Diliman                                       |
| 46  | Project 4. Ground Receiving Archiving, Science Product Development and Distribution (GRASPED)   | Advanced Science and Technology Institute (ASTI) |
| 47  | Center for Astronomy Research and Development: ASTRONOMICAL NEAR-EARTH OBSERVATION LIGHT POLLUTION (ANEO-LiPo)  | Rizal Technological University (RTU)             |
| 48  | Remote Sensing and Data Science: DATOS Helpdesk   | Advanced Science and Technology Institute (ASTI) |
| <b><i>Integrated Assessment and Modelling of Blue Carbon Ecosystems for Conservation and Adaptive Management (IAMBlueCECAM)</i></b>   |   |  |
| 49  | Project 4. Hydrodynamic Modelling for the Assessment of Protective Services of Mangroves and Seagrass (HMAPS-MS)  | UP Diliman                                       |
| 50  | Project 5. Modelling, Analysis and Simulation of Blue Carbon Cycle and Budgets (BlueCyMAS)  | UP Diliman                                       |
| 51  | Project 6. Suitability Models for Guiding Mangrove RePlanting Efforts (SuitMaPs)  | UP Diliman                                       |
| 52  | Project 8. Multi-agent Systems for Simulating Policy Scenarios on Blue Carbon Ecosystems (BlueMASSPoliS)  | UP Diliman                                       |
| <b><i>GeoSafer Mindanao Program (ZAMBASULTA, Northern Mindanao/ Cotabato, Agusan, Western Mindanao and Southeastern Mindanao)</i></b> |   |  |

|   | <b>Project Title</b>  | <b>Implementing Agency</b>  |
|---|---|---|
| 53  | Project 1. Geo-SAFER Zamboanga Peninsula – Systematic Assessment of Flood Effects and Risks in Zamboanga Peninsula, Mindanao, Philippines   | Ateneo De Zamboanga University (ADZU)   |
| 54  | Project 2. Geo-SAFER Northern Mindanao/Cotabato – Systematic Assessment of Flood Effects and Risks in Northern Mindanao and Cotabato, Philippines   | Central Mindanao University (CMU)   |
| 55  | Project 3. Geo-SAFER Agusan – Systematic Assessment of Flood Effects and Risks in the Agusan River Basin, Caraga Region, Mindanao, Philippines  | Caraga State University (CarSU)   |
| 56  | Project 4. Geo-SAFER: Western Mindanao - Systematic Assessment of Flood Effects and Risks in Western Mindanao   | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 57  | Project 5. Geo-SAFER: Southeastern Mindanao - Systematic Assessment of Flood Effects and Risks in Southeastern Mindanao   | UP Mindanao   |
| 58  | Formulation of a Settlements Development Model in New Growth Areas in the Philippines   | UP Diliman  |
| 59  | Development of Earthquake Intensity Monitoring System   | Mapua Institute of Technology (MIT)   |
| 60  | Development of Philippine Structural Integrity Monitoring System for Critical Infrastructures in Metro Manila (PhilSIMS Phase 1)  | Mapua Institute of Technology (MIT)   |
| <b><i>Comprehensive Evaluation of Critical Infrastructures and Construction Raw Materials in the Philippines Using Concrete Petrography</i></b>   |   |   |
| 61  | Project 1. Concrete Petrography as a Quality Assessment Tool of Hardened Concrete from Lifeline Structures in the Philippines   | UP Diliman  |
| 62  | Project 2. Geological, Chemical and Physical Evaluation of Concrete Raw Materials Used in Critical Philippine Infrastructures   | UP Diliman  |
| 63  | Rubbers and Waste Plastics as Reinforcement Additives for Asphalt Binder-based Pavement Infrastructures   | UP Diliman  |
| 64  | CATfish: A Modular Mini-Autonomous, Underwater Vehicle (AUV) initially submitted as (Remotely operated underwater vehicle (ROV-One))  | UP Diliman  |
| 65  | Investigation and numerical modeling of Philippine tsunamis based on historical, geomorphological and geological evidence of past earthquakes   | UP Diliman  |
| 66  | Optimization of the Operational Capabilities of Hydromet Sensors in Line with International Standards (WMO Standards) for Effective Weather, Flood Warning (CBFEWS) and Application to Research | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| <b><i>Analyzing CORDEX - SEA Regional Climate Simulations for Improved Climate Information over the Philippines: SST Influence, Variability and Extremes, Tropical Cyclone Activity</i></b> |   |   |

|  | <b>Project Title</b>   | <b>Implementing Agency</b>  |
|--|--|---|
| 67   | Project 1. Analysis of the Influence of Sea Surface Temperature Representation in Downscaled Regional Climate Using the SEACLID/CORDEX – Southeast Asia Simulations      | Manila Observatory  |
| 68   | Project 2. Multi-temporal and Extremes Analysis of Modeled Climatology over the Philippines in the SEA CORDEX Domain   | Manila Observatory  |
| 69   | Project 3. Detecting Tropical Cyclones in a Downscaled Regional Climate Model for CORDEX – SEA   | Manila Observatory  |
| 70   | Liquefaction Hazard Assessment for Resilient Schools in GMMA: A Liquefaction Probabilistic Model using Non-Invasive Geophysical Techniques and Limited Probe Hole        | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| <b><i>PH UK Newton Agham Joint Cooperation Program on Understanding the Impacts of Hydrometeorological Hazards in South East Asia</i></b>            |  |   |
| 71   | Philippines - Quantitative Lahar Impact and Loss Assessment under changing Land Use and Climate Scenarios  | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| 72   | Catchment Susceptibility to Hydrometeorological Events: Sediment Flux and Geomorphic Change as Drivers of Flood Risk in the Philippines                                  | UP Diliman  |
| 73   | Philippines Groundwater Outlook (PhiGO)  | Ateneo De Manila University (ADMU)  |
| 74   | SCaRP: Simulating Cascading Rainfall-triggered Landslide Hazards in the Philippines  | Mapua Institute of Technology (MIT)   |
| 75   | Providing High Resolution 5km Climate Change Projections in the Philippines Using Weather Research and Forecasting (WRF) Model   | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 76   | e-Asia: Development of Information Gathering and Utilization Systems using small Unmanned Airborne Vehicles (UAVs) for Disaster Risk Assessment, Monitoring and Response | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| <b><i>Development of a fixed wing short take-off and landing (STOL) unmanned aerial vehicle (UAV) for disaster risk reduction and management</i></b> |  |   |
| 77   | Project 1. Design and fabrication of an airframe for a medium-range, short take-off and landing UAV  | FEATI University  |
| 78   | Project 2. Development of a Flight Controller for a Modular UAV System   | De La Salle University (DLSU)   |
| 79   | Project 3. Cooperative UAV-UGV Missions and Applications with Custom Communications and Imaging Capabilities   | Ateneo De Manila University (ADMU)  |
| 80   | Fire Check: Urban Fire Hazard Mapping and Fire Spread Modeling   | UP Cebu   |
| 81   | A Dispersive Long-Wave Model for Predicting Coastal Flooding due to Storm Surges and Surface Waves in Manila Bay   | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 82   | Mapping of offshore active faults for resilient coasts   | UP Diliman  |
| <b><i>Severe Wind Hazard and Risk Assessment for Cebu City</i></b>   |  |   |

|   | <b>Project Title</b>  | <b>Implementing Agency</b>  |
|---|---|---|
| 83  | Severe Wind Hazard Mapping for the Philippines and Cebu City  | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 84  | Enhanced Severe Wind Vulnerability Curves of Key Building Types in the Philippines  | UP Diliman  |
| 85  | Exposure Data Development and Severe Wind Risk Assessment for Cebu City   | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 86  | Automated Real-Time Monitoring System (ARMS) for Magat Dam  | Mapua Institute of Technology (MIT)   |
| 87  | Development of Groundwater Resource Management Plan and Monitoring System for Zamboanga City and its Surrounding Areas  | Ateneo De Manila University (ADMU)  |
| 88  | Enhancing the Hydrometeorological Hazards Monitoring and Risk Assessment Capabilities of PAGASA through the Adoption and integration of NOAA Operating Systems  | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 89  | FEATURE: Feature-based Earthquake Analysis Toolset for Urban Response Estimation - Enhancing PHIVOLCS damage estimation capability using building-specific analysis aided by high resolution GIS data | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| 90  | Specific Earthquake Ground-Motion to help enhance the seismic resiliency of residential and medium-to-high rise buildings in Metro Cebu and Metro Davao   | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| <b><i>Improvement of Forecast Capability on Weather, Marine Meteorology and Short-Range Climate</i></b>   |   |   |
| 91  | Project 1. Typhoon Formation, Structure and Intensity Change in Western NP and Wave Observation and Modeling  | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 92  | Project 2. Heavy Rain Monitoring and Forecasting in the Mountainous Area and Early Warning Landslides   | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 93  | Project 3. Observations and Dynamical Downscaling of Seasonal and Sub-seasonal Forecasts  | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| <b><i>MECO - TECO Integrative Studies on the geodynamics of the Philippine and Taiwan ARC Systems</i></b> |   |   |
| 94  | Project 1. Investigating the Tectonic Evolution of Northern and Central Philippine Arcs through Geochemistry and Geophysics   | UP Diliman  |
| 95  | Project 2. Coastal Tectonics of Central Philippine Islands and Its Implications for Seismic Hazards   | UP Diliman  |
| 96  | Project 3. Geophysical Characterization of the Western Philippine Subduction Zones  | UP Diliman  |
| 97  | Understanding Lightning and Thunderstorms for Extreme Weather Monitoring and Information Sharing (ULAT)   | Advanced Science and Technology Institute (ASTI)                                      |

|     | Project Title   | Implementing Agency   |
|-----|---|---|
| 98  | Weather and Climate Science for Service Partnership for South East Asia: Building a Safer Community to Weather and Climate Variability through Science and Innovation | Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) |
| 99  | Geospatial Information Management & Analysis Project for Hazards & Risk Assessment in the Philippines (Georisk PH)  | Philippine Institute of Volcanology and Seismology (PHIVOLCS)                         |
| 100 | Micro Grid Solar PV System  | Ateneo De Davao University (ADDU)   |
| 101 | Techno - Economic Feasibility Study of Micro-Grid in a Remote Community   | Mindanao State University - Iligan Institute of Technology (MSU-IIT)                  |
| 102 | Establishing a 25-kW Waste-to-Energy Facility Using a Direct Combustion Process for Municipal Solid Waste: A Technical, Economic and Environmental Studies            | UP Los Banos  |
| 103 | Metro Manila Transportation Network: Big Data Analytics and Applications (MMTN:BDAA)  | De La Salle University (DLSU)   |
| 104 | Prototype Development of Severe Weather Amphibious Navigator Using Local Abaca Composites   | Wesleyan University of the Philippines (WUP)  |
| 105 | Development of a hybrid trimaran fast craft passenger cargo vessel using multi engine and alternative energy source from ocean waves                                  | Aklan State University (ASU)  |
| 106 | Validation and Turnover of the Hybrid Electric Train (HET)  | Metals Industry Research and Development Center (MIRDC)                               |
| 107 | Technology Promotion of Five-Coach Hybrid Electric Road Train (HERT) in General Santos City   | Metals Industry Research and Development Center (MIRDC)                               |
|     | <b><i>Intellect: Intelligent Electric Transportation Network</i></b>  |   |
| 108 | Project 1. Ad-hoc Vehicle-Infrastructure Cooperative Environment  | UP Diliman  |
| 109 | Project 2. EmoCION: Electric Mobility and Charging Infrastructure Operating as a Network  | UP Diliman  |
| 110 | Project 3. E-trike Deployment and Utilization Study   | Cagayan State University (CSU)  |
| 111 | TITAN: Vision-based Traffic Information & Analysis  | De La Salle University (DLSU)   |
| 112 | Design and Development of UP Bike Share System  | UP Diliman  |
| 113 | Recycling and Recyclability Index for End-of-Life Jeeps   | University of Asia and the Pacific (UA&P)   |
| 114 | Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring   | De La Salle University (DLSU)   |
| 115 | Cyber-Physical Transportation System  | UP Diliman  |
| 116 | Sustainable Wastewater Treatment Systems with Nutrient (SWAN) Recovery  | De La Salle University (DLSU)   |
| 117 | Development of Titanium Dioxide Films and its Derivatives for Semiconductor Mediated Photocatalytic Treatment of Water  | UP Diliman  |

|   | <b>Project Title</b>   | <b>Implementing Agency</b>   |
|---|--|--|
| 118   | MCWQM: Multi-platform and Cross-Sensor Water Quality Monitoring  | UP Diliman   |
| 119   | Electromagnetic Radar Technique for Water Detection  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 120   | Post-Treatment of Food Processing Wastewater Effluent for Nutrient Removal   | Industrial Technology Development Institute (ITDI)                   |
| 121   | Design review, design finalization and production assessment of a locally fabricated optical aerosol monitor   | UP Diliman   |
| 122   | Master of Research and Development Management  | UP Open University   |
| 123   | Enhancing the Applicability of Vertical Helophyte Filter Systems for Small Communities, Local MSMEs and Public Entity                                | DOST Region XI   |
| 124   | Support to the Rehabilitation of Boracay Island Through the Upgrading of Material Recovery Facilities (MRFs) - Phase I                               | DOST Region VI   |
| <b><i>Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions</i></b>           |  |  |
| 125   | Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Compostela Valley)  | UP Diliman   |
| 126   | Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (CARAGA)   | UP Diliman   |
| 127   | Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Bicol)  | UP Diliman   |
| <b><i>Synergistic Capacity Advancement for the Management of Laguna Lake: SCALE</i></b>                           |  |  |
| 128   | Project 1. Antibiotics, Endocrine Disruptors and Heavy Metals in Laguna Lake Water: Impacts on Food and Water Security                               | UP Diliman   |
| 129   | Project 2. Microbial Source Tracking in Selected Tributaries of Laguna de Bay  | UP Diliman   |
| 130   | Project 3. TRACe Fish – Trace oRganics and metAls in Commodity Fish: Method optimization, extent of contamination and health risk due to fish intake | UP Diliman   |
| <b><i>Assessment of Metal Content in Agricultural Products and Its Environment in Volcanic Impacted Areas</i></b> |  |  |
| 131   | Project 1. OneLab Capability Assurance System for Metal Content Assessment in Agricultural Produce, Water and Environmental Samples                  | Industrial Technology Development Institute (ITDI)                   |
| 132   | Project 2. Metal Content of Water Supplies in Volcanic Impacted Area and its Impact to Vegetation  | Industrial Technology Development Institute (ITDI)                   |
| 133   | Project 3. Household and Community Based Filters for Metals in Water   | Industrial Technology Development Institute (ITDI)                   |
| 134   | Water - Energy - Nutrient Nexus in the Cities of the Future  | De La Salle University (DLSU)  |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 135  | Establishment of Spray Drying Technology and Equipment for the Regional FICs (Batch 2)  | Industrial Technology Development Institute (ITDI)   |
| 136  | Development of Ready-to-Eat Corn Grit Meals   | UP Diliman   |
| <b><i>Food Manufacturing: Establishment of Halal Assurance Systems for Food</i></b>  |   |  |
| 137  | Establishment of Halal Assurance System for Processing Selected Banana Products (Banana Chips, Banana Catsup, and Frozen "Saba" Banana)         | Industrial Technology Development Institute (ITDI)   |
| 138  | Establishment of Halal Assurance System for Bakery Products   | Industrial Technology Development Institute (ITDI)   |
| 139  | Establishment of Halal Assurance System for Muslim Delicacies and Processing Techniques   | Sultan Kudarat State University (SKSU)   |
| 140  | Development of Regional Halal Native Delicacies   | Mindanao Autonomous College Foundation, Inc. (MACFI)   |
| 141  | Technical Guidelines Development for Minimally Processed Halal Chicken and Chicken By-Products (Edible Giblets)                                 | Industrial Technology Development Institute (ITDI)   |
| 142  | Development of Emulsified Meat Products (Sausage, Nuggets, and Burgers)   | Industrial Technology Development Institute (ITDI)<br><br>with University of Southern Mindanao (USM)                           |
| <b><i>DOST Integrated S&amp;T Halal Program</i></b>                                  |   |  |
| 143  | Establishment of Halal Assurance System for Production, Method Development and Standardization of Cosmetics and Toiletries                      | Industrial Technology Development Institute (ITDI)   |
| 144  | Operationalization of Halal Verification Laboratories (HVLs) of DOST Regions CALABARZON, 11, 12, and ARMM in Support to Halal Assurance Systems | DOST Region IV-A<br><br>with DOST Regional Offices 11, 12, and ARMM  |
| <b><i>Human Resource Development of Halal Science, Technology and Innovation</i></b> |   |  |
| 145  | Training Needs Assessment and Development and Deployment of Training Modules on Halal   | DOST Region XI   |
| 146  | Curriculum Development and Offering on Halal Science and Scholarship for SUC Faculty on Halal Science   | University of Southern Mindanao (USM)<br><br>with Sultan Kudarat State University (SKSU) and Central Mindanao University (CMU) |
| <b><i>Integrated Food Safety Program</i></b>   |   |  |
| 147  | Prevalence of Mycotoxin in Rice and Corn in the Philippines   | Food Development Center - National Food Authority  |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 148  | Prevalence of Heavy Metals and Pesticide Residues in Milled Rice and White Corn Grits in the Philippines  | Food Development Center - National Food Authority                      |
| 149  | Development of Food Safety Guidelines for the Food Service Sectors  | Food and Nutrition Research Institute (FNRI)                           |
| 150  | Development of Grading System for Adoption of Food Establishments in the Philippines  | Food and Nutrition Research Institute (FNRI)                           |
| 151  | DOST Food Safety Human Resource Development Project   | DOST Region IV-A   |
| 152  | Risk Profiling of Hazards in Philippine Food to Support National Risk Management  | UP Diliman   |
| 153  | Upgrading and Enhancing the Capacity of the Packaging Technology Division in Packaging Research and Innovation  | Industrial Technology Development Institute (ITDI)                     |
| 154  | Development of Chicken Egg White Powder and Granules from Low Value Edible Shell Eggs   | UP Diliman   |
| 155  | Development, Standardization, and Characterization Studies of Tupig, Bukayo, and Bibingka – Region I Native Delicacies                                | Pangasinan State University (PSU)                                      |
| <b><i>Fishery By-product Processing for Food Application: Towards Commercialization</i></b>                                    |   |  |
| 156  | Project 1. Collagen and Gelatin from By-products of Fish Processing Industry  | Central Luzon State University (CLSU)                                  |
| 157  | Project 2. Fish Oil, Proteases and Protein Hydrolysate from By-products of Fish Processing  | Central Luzon State University (CLSU)                                  |
| 158  | Establishment of ISO17034:2016 Quality Management System and Development of Fish Reference for Proximate, Minerals and Cholesterol Analysis           | Food and Nutrition Research Institute (FNRI)                           |
| 159  | Monitoring and Evaluation of Batch II Complementary Food Technology Adoptors  | Food and Nutrition Research Institute (FNRI)                           |
| <b><i>Product Development and Utilization Program of Abalone in MIMAROPA</i></b>   |   |  |
| 160  | Development of bottom housing system for abalone farming  | Western Philippines University (WPU)                                   |
| 161  | Development of Food and Non-Food Products from Abalone  | Marinduque State College (MSC)<br>Western Philippines University (WPU) |
| 162  | Development of Chitosan Film from Sardine Fish Scales   | Western Mindanao State University (WMSU)                               |
| 163  | Performance Evaluation of Dipstick Assay for the Detection of Salmonellae in Selected Food Matrices   | National Institute of Molecular Biology and Biotechnology (NIMBB)      |
| <b><i>I-SALT: Improving Productivity and Efficiency of Local Salt Producers towards a Self-Reliant Philippines in 2020</i></b> |   |  |
| 164  | Project 1. Design, Prototyping of Salt Processing Equipment (Washer, Dryer, Iodizer, Crystallizing Pan, Furnace, Concentrator (Ion exchange membrane) | Industrial Technology Development Institute (ITDI)                     |
| 165  | Project 2. Development of Gourmet Salt Products and Micro-sized Salt in Laboratory Scale  | Industrial Technology Development Institute (ITDI)                     |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 166  | Pilot-Scale Production of Spray-Dried Powder Dextran and High Fructose Syrup using Whole Cell ( <i>Leuconostoc mesenteroides</i> isolates) ITDI Fermentation Technology                                     | Industrial Technology Development Institute (ITDI)                   |
| 167  | Development of an Effective Distribution System for RTE Retort Foods (Chicken Arroz Caldo and Smoked Fish Rice Meal) to Mitigate the Magnitude of Distress for Calamity Survivors and Providers of Services | Industrial Technology Development Institute (ITDI)                   |
| 168  | Enhancing OneLab for Global Competitiveness   | DOST Region IX<br>Note: 16 ROs and 7 RDIs                            |
| 169  | Design and Improvement of Gong Fabrication Processes Through S&T Intervention   | Metals Industry Research and Development Center (MIRDC)              |
| 170  | Metrology and PDEA: Correct Quantity, Right Decision  | Industrial Technology Development Institute (ITDI)                   |
| 171  | Design and Development of Processing Machineries for Honey and Intermediate Products  | Don Mariano Marcos Memorial State University (DMMMSU)                |
| 172  | Strengthening of DOST Regional Metrology Laboratory Services - Phase II   | DOST Regions from CAR to CARAGA                                      |
| 173  | Development of a Future Earth Philippines Program (FEPP) Phase I  | National Research Council of the Philippines (NRCP)                  |
| 174  | Characterization and Separation of Heavy Minerals in the Alluvial and Beach Sands in San Vicente, Northwestern Palawan  | Philippine Nuclear Research Institute (PNRI)                         |
| 175  | Establishment of Common Service Facility (CSF) for Artisanal Small-Scale Gold Mining in Northern Mindanao   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 176  | Research and Development Project to Rehabilitate and Enhance Productivity in Lahar and Ash-Laden Areas in Central Luzon   | Central Luzon State University (CLSU)                                |
| 177  | Geopolymerization and its Potential Application in Artisanal Gold Mine Tailings Stabilization   | Central Mindanao University (CMU)                                    |
| <b>3R Approach to Sustainable Management of Nickel Laterite Ore Mining</b> |   |  |
| 178  | Project 1. Utilization of Nickel Laterite Ore rock (low grade) for various applications: Acid Mine Drainage treatment and Carbon Sequestration  | De La Salle University (DLSU)  |
| 179  | Project 2. Recycling and reprocessing of siltation sediments from selected nickel laterite mining areas in the Philippines as raw materials for the synthesis of iron-based novel adsorbents                | Central Mindanao University (CMU)                                    |
| 180  | Project 3. Recovery of Nanominerals from Silt for Various Ceramic Applications  | Central Mindanao University (CMU)                                    |
| 181  | Project 4. Recycling of silt and spent residue from reprocessing as raw materials for geopolymer composite  | Central Mindanao University (CMU)                                    |
| 182  | Pilot Scale Production of Nickel Pig Iron from Low Grade Laterite Ores  | Mines and Geosciences Bureau (MGB)                                   |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>                                 |
|--|---|--|
| 183  | Extraction of Radionuclides Rare Earths, and other Valuable Industrial Elements from Phosphogypsum Tailings   | Philippine Nuclear Research Institute (PNRI)               |
| 184  | Tracing the Pathways of Mercury Concentration in Mined-Out Area   | Philippine Nuclear Research Institute (PNRI)               |
| 185  | Establishment of the PTRI "Perfect Fit" Textile Product Development Center  | Philippine Textile Research Institute (PTRI)               |
| 186  | Establishment of Regional Yarn Production and Innovation Center   | Philippine Textile Research Institute (PTRI)               |
| 187  | Utilization of Spent Tea Leaves and Tobacco Dusts as Additives for Plywood Adhesives  | Forest Products Research and Development Institute (FPRDI) |
| 188  | Production of Ready-to-Buy (RTB) Natural Textiles and Dyes in Support of Increasing Utilization of Local and Indigenous Philippine Textile                      | Philippine Textile Research Institute (PTRI)               |
| <b><i>Enhancement of the Competence and Capability of the National Metrology Laboratory of the Philippines Metrology</i></b> |   |  |
| 189  | Project 1. Chemical Metrology for Organic Contaminants in Foods and Water   | Industrial Technology Development Institute (ITDI)         |
| 190  | Project 2. Chemical Metrology for Inorganic Toxic Elements in Food and Water  | Industrial Technology Development Institute (ITDI)         |
| 191  | Project 3. Biological Metrology for Microorganisms in Food  | Industrial Technology Development Institute (ITDI)         |
| 192  | Project 4. Strengthening the Physical Metrology Capabilities of the National Metrology Laboratory   | Industrial Technology Development Institute (ITDI)         |
| 193  | Modular Multi-Industry Innovation Center for Oils, Blends, and Sauces   | Industrial Technology Development Institute (ITDI)         |
| <b><i>National R&amp;D Program for Natural Rubber Processing and Rubber Products Manufacturing</i></b>                       |   |  |
| 194  | Project 6. Processing and Utilization of Senile and Unproductive Rubberwood (Hevea brasiliensis) Trees for High Value Furniture, Mouldings and Joinery Products | Forest Products Research and Development Institute (FPRDI) |
| <b><i>Natural Dyes and Colorants R&amp;D Program</i></b>   |   |  |
| 195  | Project 1. Commercial Scale Verification of Natural Dyes for Textiles   | Philippine Textile Research Institute (PTRI)               |
| 196  | Project 2. Development of Natural Colorants for Cosmetics   | Industrial Technology Development Institute (ITDI)         |
| 197  | Project 3. Extraction, Characterization, and Application of Natural Colorants in Nutritional Food Products  | Food and Nutrition Research Institute (FNRI)               |
| 198  | Project 4. Natural Food Colors from Local Source as Food Additive   | Industrial Technology Development Institute (ITDI)         |
| <b><i>Processing of Bio-based Polyols and Polyurethanes for Industrial Applications Program</i></b>                          |   |  |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 199  | Project 1. Production of Bio-based Polyols from Lignocellulosic Biomass   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 200  | Project 2. Development of Polyurethane-based Packing Materials and Anti-corrosive Coatings from Vegetable Oil   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 201  | Polyhydroxyalkanoate (PHA) Production from Agricultural Residues  | UP Los Baños   |
| 202  | Development of Design Prototypes for Government Agencies' Uniforms to Promote Mainstreaming of Natural Fibers and Local Weaves  | Philippine Textile Research Institute (PTRI)                         |
| 203  | Design and Development of a PLC-Based High Capacity Tissue Culture Growth Chamber   | Cavite State University (CvSU)                                       |
| 204  | Comparison of Different Enzyme Preparations for Production of Oligofructose and Inulin from Sugarcane Juice   | Cavite State University (CvSU)                                       |
| 205  | Development of Freeze-Dried Local Alternative Flavors for Ice Cream   | Benguet State University (BSU)                                       |
| <b><i>Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry</i></b>   |   |  |
| 206  | Project 1. Physico-chemical factors which affect the quality of VCO   | Ateneo De Manila University (ADMU)                                   |
| 207  | Project 2. Investigation of the microbiological factors which affect the quality of VCO   | Ateneo De Manila University (ADMU)                                   |
| 208  | Project 3. Investigation of factors affecting the sensory properties and acceptability of VCO   | UP Diliman   |
| 209  | Project 4. Assessment of VCO Production: GMP and HACCP  | Ateneo De Manila University (ADMU)                                   |
| 210  | Project 5. Water Activity and Percent Moisture: Effect on VCO Stability   | Ateneo De Manila University (ADMU)                                   |
| 211  | Detection of Adulteration in Philippine Honey using Carbon-13 Isotope Analysis  | Philippine Nuclear Research Institute (PNRI)                         |
| 212  | Tabang MARAWI (Malnutrition Alleviation and Health Restoration through After-War Interventions)   | Food and Nutrition Research Institute (FNRI)                         |
| <b><i>Nutrition Intervention Model in Time of Man-Made Calamities – A Quick Response to Emergency</i></b>                                  |   |  |
| 213  | Project 1. Production of Nutritional Food Products for Conflict Stricken Areas  | Food and Nutrition Research Institute (FNRI)                         |
| 214  | Project 2. Implementation of GarNESupp (Gardening, Nutrition Education, Supplementary Feeding) Model in Conflict-stricken area (Marawi)   | Food and Nutrition Research Institute (FNRI)                         |
| 215  | Filipinnovation Entrepreneurship Corps: Enabling Researchers to Assess Commercial and Societal Value of their Research  | De La Salle University (DLSU)  |
| 216  | Enhancement, Field Validation and Market Readiness Detection of DNA-based Nanobiosensor for the E. coli, E. coli 0157:H7 and Salmonella enterica in Food, Feed and Farm Produce | National Institute of Molecular Biology and Biotechnology (NIMBB)    |
| <b><i>Higher Education Institution Readiness for Innovation &amp; Technopreneurship (HEIRIT) Development Program for Starting TBIs</i></b> |   |  |

|   | <b>Project Title</b>   | <b>Implementing Agency</b>                                   |
|---|--|--|
| 217   | Higher Educational Institution Readiness for Innovation and Technopreneurship (HeIRIT) Development Program for Starting TBIs   | UP Diliman   |
| 218   | Establishment of TBI Center for the University of the Cordilleras  | University of the Cordilleras                                |
| 219   | Establishment of DOST-T.I.P. Technopreneurship and Innovation Center   | Technological Institute of the Philippines (TIP)             |
| 220   | Establishment of TBI Center at Miriam College - Henry Sy, Sr. Innovation Center  | Miriam College   |
| 221   | Establishment of DOST-BulSU BARAS TBI (Business Assistance for Regional Acceleration and Sustainability Technology Business Incubator)   | Bulacan State University (BulSU)                             |
| 222   | Establishment of the DOST-TUPV HIVE (Hub for Innovation and Value Engineering)   | Technological University of the Philippines – Visayas (TUPV) |
| 223   | Support for the Establishment of TBI in Holy Angel University (HAU)  | Holy Angel University (HAU)                                  |
| 224   | Establishment of DOST-Samar State University Technology Business Incubator   | Samar State University                                       |
| <b>STARTUP</b>  |  |  |
| 225   | Development of Data Analytics, Big Data and Artificial Intelligence to Build a Smart Restaurant Management Platform  | Restograph Inc.  |
| 226   | Enhancement of K-12 Grading System towards Intelligent Computing Environment Through Wela School System Innovations (Responsive Monitoring System for Educational Institution) | Wela School System   |
| 227   | CONDAMA & EEMA - Artificial Intelligence Vision System for Retail Analytics  | UP Diliman   |
| 228   | Beta Testing of Biotechnology Kits for STEM Education  | Kinovette Scientific Solutions Co.                           |
| 229   | Development of a Social Media Listening Tool for Filipinos   | Senti Techlabs Inc.  |
| 230   | Mobile Application Venture Capital Competition   | DOST Region VII  |
| 231   | Prototype Development of Semi-Automated Foam Shredder Equipment (TECHNICOM)  | Holy Angel University  |
| <b>Funding Assistance for Spin-off and Translation of Research in Advancing Commercialization (FASTRAC) Program</b> |  |  |
| 232   | Technology and Market Validation for Universal Structural Health Evaluation and Recording (USHER) System   | Mapua Institute of Technology (MIT)                          |
| 233   | Product and Market Validation for a Semi-Automated Reef Fish Census System   | UP Diliman   |
| 234   | CharM - Charging in Minutes Spinoff Project - Technology Development for Manufacturability and Open-water Market Validation  | UP Diliman   |
| 235   | Product Testing and Market Validation of Marine Nanocoat for Anticorrosion, Antirbarnacle, AntiUV, coating for ship vessel applications  | De La Salle University (DLSU)                                |

|     | <b>Project Title</b>   | <b>Implementing Agency</b>  |
|-----|--|---|
| 236 | Commercial Development of Production, Application and Full Market Study of Monascus Red Colorant   | National Institute of Molecular Biology and Biotechnology, UP Los Banos |
| 237 | Enhancement of Mapua's Technology Transfer Process and Structure   | Mapua Institute of Technology (MIT)                                     |
|     | <b><i>IP Management Program for Academic Institutions Commercializing Technologies</i></b>   |   |
| 238 | Assistance in the Commercialization of DOST Funded Technologies in De La Salle University  | De La Salle University (DLSU)   |
| 239 | Establishment of the Technology Management System of the University of the Philippines Cebu  | UP Cebu   |
| 240 | Enhancing Operational Capability of Palawan International Technology Business Incubator (PITBI)  | Palawan State University  |
| 241 | Enhancement of Prototype and Market Readiness of R-TAP (an advanced pressure management system for water utilities)  | Hiraya Technology Solutions, Inc.                                       |
| 242 | Establishment of the Technology Management System and Structure of the Ateneo de Manila University   | Ateneo De Manila University (ADMU)                                      |
| 243 | Geophysical Exploration Instruments with Micro-seismic Imaging and Tomography for Energy Exploration in the Philippines  | Tekton Geometrix, Inc.  |
| 244 | Technology Business Incubator (TBI) at DLSU-STC Campus   | De La Salle University (DLSU)   |
| 245 | Establishment of the AIM-Dado Banatao Incubator  | Asian Institute of Management (AIM)                                     |
| 246 | Pilot Implementation of ITDI's Pre-Commercialization Tools/Strategies for Effective Transfer and Commercialization of Generated Technologies and Intellectual Properties | Industrial Technology Development Institute (ITDI)                      |
| 247 | Smart Vision: AI-Guided Vision System for the Blind  | Grayscale Marketing Consultancy   |
| 248 | Support to the Commercialization of 500 DOST-Generated Technologies (Phase 2): Strengthening the Intellectual Property and Technology Portfolios of the DOST             | Technology Application Promotion Institute (TAPI)                       |
| 249 | 2017-2019 DOST Technology Transfer Day (TTD)   | Technology Application Promotion Institute (TAPI)                       |
|     | <b><i>TBI 4.0 Program</i></b>  |   |
| 250 | Elevating the Capacity and Services of TBIs towards 4th Generation Incubator's Facilities  | IdeasSpace Foundation Inc. through QBO Innovation Hub                   |
| 251 | DOST Philippine TBI Network Portal and Marketing Strategy for the DOST TBI Portal and Program  | West Visayas State University   |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 252  | DOST-S.I.B.O.L. Labs: Startup Innovation and Business Opportunity Linkage Labs (A Collaboration between UC Berkeley Sutardja Center for Entrepreneurship and Technology and UP Los Banos Technology Transfer and Business Development Office) | UP Los Baños   |
| 253  | Co-incubation Program between CDO B.i.t.e.s. and Spring Valley  | University of Science and Technology of Southern Philippines         |
| 254  | Technology Business Incubator 4.0 for Region 4  | Batangas State University  |
| 255  | Upgrading and Capability-Enhancement of Animo Labs TBI  | De La Salle University (DLSU)  |
| 256  | Evolution of UPScale from Local to Global Incubation  | UP Diliman   |
| 257  | Mindanao Scale Up Program for DOST-iDEYA-TBI  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 258  | Effectiveness of 21st Century Learning Environment Model as a Support System to Teaching and Learning of Science and Mathematics (formerly Establishment of the 21st Century Education Centers in the Division of LIPA City, Batangas City)   | DOST Region IV-A   |
| <b><i>Development of Philippine Scientific Earth Observation Microsatellite (PHL-MICROSAT)</i></b> |   |  |
| 259  | Project 1. Microsatellite BUS Development for Philippine Microsat   | UP Diliman   |
| 260  | Training and Internship Program for Increased Local Bioinformatics Utility and Expertise  | Philippine Genome Center   |
| 261  | Capability Building on Energy Efficiency and Conservation (EE&C) for State Universities and Colleges (SUCs) in Six (6) Regions as Demonstration Sites   | Industrial Technology Development Institute (ITDI)                   |
| <b><i>Infrastructure Development Program (IDP)</i></b>   |   |  |
| 262  | Establishment of a Pampanga State Agricultural University (PSAU) Bio-energy Laboratory  | Pampanga State Agricultural University (PSAU)                        |
| 263  | Upgrading of the PNRI Nuclear Training Center Laboratory Facility   | Philippine Nuclear Research Institute (PNRI)                         |
| 264  | UP Cebu Cybersecurity Research and Extension Center   | UP Cebu  |
| 265  | Establishment of an Additive Manufacturing Research Laboratory  | Bataan Peninsula State University (BPSU)                             |
| 266  | Establishment of the University of San Carlos Center for Advanced Computational Modelling and Simulation (CACoMS)   | University of San Carlos (USC)                                       |
| 267  | Establishment of a Wind Turbine Development and Testing Laboratory  | Central Philippines University (CPU)                                 |
| 268  | Acquisition of Laboratory Equipment in Support of the facility for Nanotechnology R&D in Central Luzon State University   | Central Luzon State University (CLSU)                                |
| 269  | Establishment of Renewable Energy Laboratory and Demonstration Park   | Isabela State University (ISU)                                       |

|  | <b>Project Title</b>   | <b>Implementing Agency</b>                                    |
|--|--|---|
| 270  | Development of Future Building Materials and Structures (FBMS) Laboratory  | Northwest Samar State University (NwSSU)                      |
| 271  | Development of Geographic Information System (GIS) Innovation Laboratory (GIS InnoLab)   | University of Cordilleras                                     |
| 272  | Establishment of CvSU SiMM (Simulation, Modeling and Measurement) Laboratory   | Cavite State University (CvSU)                                |
| 273  | Establishment of the USJ-R Center for Energy Harvesting Materials Research   | University of San Jose Recoletos (USJ-R)                      |
| 274  | Establishment of a Plasma Physics Laboratory for Materials Processing Applications   | UP Baguio   |
| 275  | Science on the Move and Science Works: Enhancing the Interest of Students in Geographically - Isolated and Depressed Areas (GIDA)  | Philippine Foundation for Science and Technology (PFST)       |
| 276  | Strategic Communication Approaches to Boost the Philippine Nuclear Research Institute Promotions   | Philippine Nuclear Research Institute (PNRI)                  |
| <b><i>Communicating Science for the People</i></b> |  |   |
| 277  | Leveraging the Power of Broadcast and Web Media to Promote Science for The People (DOSTv)  | Science and Technology Information Institute (STII)           |
| 278  | Doubling the Reach through Information, Education and Communication (IEC) Campaign   | Science and Technology Information Institute (STII)           |
| 279  | Enhanced S&T Experience using Leading-Edge Learning Additions and Realities (STELLAR)  | Science and Technology Information Institute (STII)           |
| 280  | Strengthening the Core   | Science and Technology Information Institute (STII)           |
| 281  | Space Adventure Traveling Exhibition   | Mind Museum   |
| 282  | Intensified Promotion of FPRDI - developed Technologies and Service  | Forest Products Research and Development Institute (FPRDI)    |
| 283  | Technology Marketing Package for Juan and Juana  | Food and Nutrition Research Institute (FNRI)                  |
| 284  | Impact Assessment of the Department of Science and Technology (DOST) Small Enterprise Technology Upgrading Program (SETUP)   | Development Academy of the Philippines (DAP)                  |
| 285  | Development of Municipal e-Governance Systems through ICT  | Camarines Sur Polytechnic Colleges (CSPC)                     |
| 286  | Prototype Development and Field Testing of Mosquito-Repellent Textile  | Philippine Textile Research Institute (PTRI)                  |
| 287  | Standards & Testing Automated Modular Platform (STAMP)   | UP Diliman  |
| 288  | Summer Training Camp for High School Students on Genomics and Bioinformatics at the Philippine Genome Center   | UP Diliman  |
| 289  | Specific Earthquake Ground-Motion Levels to Help Increase the Seismic Resiliency of Government Infrastructures, Residential and Medium -to-High Rise Buildings in Pangasinan, Tarlac, Metro Iloilo-Guimaras, Cauayan City, Butuan City and Mati City | Philippine Institute of Volcanology and Seismology (PHIVOLCS) |

|   | <b>Project Title</b>   | <b>Implementing Agency</b>                                |
|---|--|---|
| 290   | Development of a Wastewater Filtration System Using Indigenous Materials   | Mariners Polytechnic Colleges Foundation of Canaman, Inc. |
| 291   | PISOLAR: Payment Innovation for SHS Ownership by Lay Away Routine  | University of Southeastern Philippines                    |
| 292   | Maritime Transport Information System (MARIS)  | UP Diliman  |
| <b><i>Establishment of the Philippine Center for Additive Manufacturing (PhilCAM)</i></b> |  |   |
| 293   | Development of Multiple Materials Platform for Additive Manufacturing (MATDEV)   | Industrial Technology Development Institute (ITDI)        |
| 294   | Research on Advanced Prototyping for Product Innovation and Development using Additive Manufacturing Technologies (RAPPID-ADMATEC)                             | Metals Industry Research and Development Center (MIRDC)   |
| 295   | Development of a Philippine Indigenous Instrument Sounds Database  | UP Diliman  |
| 296   | AI-driven Software Systems for Tertiary Education Institutions   | Edusuite Inc.   |
| 297   | Optimization of an Industry Grade Prototype of Po-lite Products  | Po-lite Technology Inc.                                   |
| 298   | Technology Innovations for Mathematical Reasoning, Statistical Thinking and Assessment   | Ateneo De Manila University (ADMU)                        |
| 299   | Creation of Smart Geophones for Cost-Efficient 2D Seismic Energy Exploration   | Tekton Geometrix, Inc.                                    |
| 300   | Innovation and Technopreneurship Hub (iTech)   | Caraga State University                                   |
| 301   | PCIEERD NSRI Research Grant  | UP Diliman  |
| 302   | Enhancement and Market Validation of Easybus (a Total Digital Booking Platform) for Buses  | Easybus PH Inc  |
| 303   | Product Development and Commercialization of IQube Home Kit  | Tactiles Corporation                                      |
| 304   | Field and Market Testing of ILAWA: Renewable Power Generation Using Recycled Anodic Material for Small Fishing/Touring Vessels                                 | Technological Institute of the Philippines (TIP)          |
| 305   | Production Process Optimization and Market Validation of Oyster Powder from Philippine Oyster ( <i>Crassostrea irredalei</i> )                                 | UP Visayas  |
| 306   | Universal Sensing Meter for Instruction & Laboratory Experiments (U-SMiLE)   | West Visayas State University                             |
| 307   | Prototype Development of Natural Fiber-Thermoplastic Composites from Agricultural and Industrial Wastes for Industrial Applications                            | Industrial Technology Development Institute (ITDI)        |
| 308   | Improvement of Food Security on Poultry Products by Upgrading Farm Yield and Efficiency Through the Introduction of Highly Tailored Farm-specific Improvements | Farmwatch Solutions, Inc.                                 |
| 309   | Fabrication and Performance Evaluation of Abaca Fiber-Reinforced Composites for Boat Application   | Industrial Technology Development Institute (ITDI)        |

|     | Project Title  | Implementing Agency  |
|-----|--|--|
|     | <b><i>Natural Fibers as Nanostructured Scaffolds for Biomedical Applications</i></b>   |  |
| 310 | Project 1. Nanofibrous Scaffolds from Natural Biomaterials for Tissue Engineering  | Industrial Technology Development Institute (ITDI)                     |
|     | <b><i>Bamboo Musical Instruments Innovation Research and Development Program</i></b>   |  |
| 311 | Project 3. Processing Facility for Bamboo musical Instruments and Other Lignocellulosic Materials  | Forest Products Research and Development Institute (FPRDI)             |
| 312 | Mindanao Renewable Energy R&D Center (MREC)  | Ateneo De Davao University (ADDU)                                      |
| 313 | Prototype Development of the Deepwater Operation 3D Visual Mapping and Inspection System (PD-DOMAINS)  | Antipara Exploration Inc.  |
| 314 | Enhancement and Market Validation of Plasma Enhanced Chemical Vapor Deposition Industrial Prototype for Nitride-Based Coatings                     | UP Diliman   |
| 315 | Fundamental study of the physical properties of metal-oxide single nanowires and nanoparticles for bio-nano-sensing                                | De La Salle University (DLSU)  |
| 316 | Establishment of Advanced Mechatronics, Robotics, and Industrial Automation Laboratory (AMERIAL) in Support of the Metals and Engineering Industry | Metals Industry Research and Development Center (MIRDC)                |
| 317 | Establishment of the DOST-TOMASInno Center TBI   | University of Santo Tomas (UST)  |
| 318 | Project BUHAWI (Automated Gun Mount for Browning 0.50 Caliber Machine Gun, M2, Heavy Barrel)   | Metals Industry Research and Development Center (MIRDC)                |
| 319 | Strengthening the DOST ICT Services  | Department of Science and Technology - Information Technology Division |
| 320 | Pilot Implementation Phase of the R&D Leadership (RDLead) Program  | National Research Council of the Philippines (NRCP)                    |
| 321 | Pulp-to-Print: Development of Print-Ready Cellulose Composites from Paper Mulberry   | UP Diliman   |

**List of Projects Completed with Peer-reviewed journals, Presented in National and/or International Conferences  
(Completed Projects for the Past 4 Years)**

1. DREAM Project 1. LIDAR and SAR Data Acquisition
2. DREAM Project 2. LIDAR and SAR Data Calibration and Validation
3. DREAM Project 3. Extracting Digital Elevation Models and Salient Features for Flood Modelling
4. DREAM Project 4. Integrating High Resolution Digital Elevation Models (DEMs) into GIS-based Flood Modelling
5. DREAM Project 5. Training for LIDAR Data Acquisition and Flood Modeling
6. MiC Project 1. Interlaboratory Comparisons of Additives and Contaminants in Foods
7. Sub-Program 2. Biodiversity Assessment of Terrestrial and Aquatic Ecosystems in Selected Mining Environs in Mindanao. Project 2. Assessment of Aquatic Biodiversity in Selected Mining Environs in Mindanao
8. Sub-Program 2. Biodiversity Assessment of Terrestrial and Aquatic Ecosystems in Selected Mining Environs in Mindanao. Project 4. Contamination Pathway and Pollution Management of Mining in Mindanao -
9. Design and Development of Aerial Mapping and Imaging Systems and Standards
10. Smart Wire Project 1. Energy Efficient Data Acquisition and Conditioning for the Smart Wire Sensor Node Project
11. Smart Wire Project 3. Energy Ultra-Low Power Computation and Communication for the Smart Wire Sensor Node Project
12. Smart Wire Project 4. Resilient Data Transport
13. Metal Bio-Indicator Plant Species of the Philippines
14. Establishment of Centralized Facility of Ultra High Temperature/High Temperature Short Time Pasteurizer for Milk, Coconut Water and Other Juices
15. System to identify, Quantify and Map the Storm Surge Threat to Philippine Coasts
16. MinERS Project A. Non-Hazardous Methods of Gold Extraction for Philippine Small-Scale Mining Applications
17. MinERS Project G. The Gold and Copper Chase: Life Cycle Analysis of Sustainable Small-Scale Production System
18. Revit Project 2. Establishment of Handloom Weaving Livelihood at the DOST Innovation Centers
19. Rubber Project 2. Optimization and Improvement of Process in the Production of Technically Specified Rubber and Demonstration of Improved Facilities in Zamboanga Peninsula
20. Rubber Project 3. Enhancing and Increasing Local Content in Rubber for Motorcycle Tire Application
21. ITS 1. Advanced Traffic & Pollution Monitoring and Analysis System Based on GPS Trajectory Data, Air Quality Data and Engine Status Data collected from Taxis in Metro Manila (ATPMS) - Year 1 & 2
22. ITS 2. Development of a Customized Local Traffic Simulator - Year 1 & 2 (LOCALSIM)
23. ITS 3. An Integrated and Optimal Scheduling of a Public Transport System in Metro Manila (PUBFix)
24. Drought and Crop Assessment and Forecasting (DCAF)
25. Project e-Bayanihan: A Nationwide Web – Mobile Based System for Participatory Disaster Management
26. Production, Characterization and Application of Red Pigment Produced by *Monascus purpureus* M1018
27. Design, Fabrication, and Evaluation of Monitoring and Sampling Devices for Particulate Matter
28. Molecularly Imprinted Polymers (MIPs) for the Targeted Purification of Natural Compound

29. CRAVAT Project 1. FISHDROP 360: Development Tools for Improved Monitoring of Reef Fish Communities
30. CRAVAT Project 2. Teardrop Upgrade
31. CRAVAT Project 3. Integration of ARRAS and CRAVAT Tools
32. Development of Temporary Shelter System for Disaster Stricken Areas
33. Development of Ink Using Carbon from Straight Pyrolysis of Glycerol as Electrodes in Printed Electronics
34. Fabrication of a Solid-State Rechargeable Li-ion Battery Using  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  as Solid Electrolyte for Energy Storage Applications
35. Gitara ni Juan: Development of Prototype Design and Standardization of the Guitar-making Process for Quality Classical Guitars Using selected Philippine Woods
36. Enterprise Center for Technopreneurship: Outreach
37. Pre-positioning & Allocation of Relief Supplies GIS-Based Support System for Disaster Preparedness & Response
38. UPLB Project 1. Bench-scale production of Filters for the Removal of Arsenic from Contaminated Water Using Modified Biopolymer- Silica Nanocomposite Materials
39. UPLB Project 2. Bench-scale Production of Nanosensors for the Detection and Analysis of Arsenic in Contaminated Water
40. UPLB Project 3. Bench-scale Production of Hand-held Nanosensors for Methane Using Zinc Oxide Film
41. UPLB Project 4. Bench-Scaling of the Production of Cellulosic Nanocrystals from Kawayang-tinik (*Bambusa blumeana*) and Its Utilization for Renewable Nanomaterials
42. UPLB Project 5. Production of Nanosilica from Rice Hulls and Rice Hull Ash and Bench Scale Verification of the Production of Biodegradable Packaging Using Cassava Starch-RHA Nanosilica
43. Development and Deployment of Adaptive, Interactive, SMS-Based Modules for English
44. Stealth Assessment of Student Conscientiousness, Cognitive-affective States, and Learning using and Educational Game for Physics
45. Roll Out of Complementary Food Production to Priority Regions (Batch 2)
46. Development of Competence of the DOST Food Innovation Centers (FICs) and Recognition of Most Innovative Products
47. Hemicellulose Extraction, Process Development and Toxicological Evaluation of a Hemicellulose-chitosan/tripolyphosphate (polyphosphate) Nanocomposite Coating for the Postharvest-life Extension of Papaya (*Carica papaya* L.) Fruits
48. Black Sand Mineral Characterization
49. Regional Disaster Science and Management S&T Capacity Development (Phase II)
50. Project 1.A.1. Data Acquisition Component (DAC)
51. Project 1.A.2. LIDAR Data Calibration, and Bathymetry Component (DVBC)
52. Project 1.A.3. LIDAR Calibration, Point Cloud Classification, and Image Orthorectification (DPPC)
53. Project 1.A.4. Integrating High Resolution Digital Elevation Models (DEMs) into GIS-based Flood Modeling
54. Project 1.A.5 Data Archiving and Distribution
55. Project 1.B.1 LIDAR Data Processing and Validation in Luzon: CAR and Selected Sites in Region 1
56. Project 1.B.2 LIDAR Data Processing and Validation in Luzon: Northeastern Luzon
57. Project 1.B.3 LIDAR Data Processing and Validation in Luzon: Region 3 and Pangasinan (Region 1)
58. Project 1.B.4 LIDAR Data Processing and Validation in Luzon: MIMAROPA and Laguna (Region 4)
59. Project 1.B.5 LIDAR Data Processing and Validation in Luzon: CABARZON (Region 4A except Laguna)
60. Project 1.B.6 LIDAR Data Processing and Validation in Luzon: Bicol (Region 5)
61. Project 1.B.7 LIDAR Data Processing and Validation in Visayas: Western Visayas (Region 6)

62. Project 1.B.8 LIDAR Data Processing and Validation in Visayas: Central Visayas (Region 7)
63. Project 1.B.9 LIDAR Data Processing and Validation in Visayas: Eastern Visayas (Region 8)
64. Project 1.B.10 LIDAR Data Processing and Validation in Mindanao: Zamboanga Peninsula (Region 9)
65. Project 1.B.11 LIDAR Data Processing and Validation in Mindanao: Regions 10, 12, and ARMM
66. Project 1.B.12 LIDAR Data Processing and Validation in Mindanao: Selected Sites in Northern Mindanao (Region 10) and 11
67. Project 1.B.13 LIDAR Data Processing and Validation in Mindanao: Davao Region / Southern Mindanao (Region 11)
68. Project 1.B.14 LIDAR Data Processing and Validation in Mindanao: CARAGA Region (Region 13)
69. Project 2.A.1 Agricultural Resources Extraction from LIDAR Surveys
70. Project 2.A.2 Aquatic Resources Extraction from LIDAR Surveys
71. Project 2.A.3 Forest Resource Extraction from LIDAR Surveys (FRExLS)
72. Project 2.A.4 Development of the Philippine Hydrologic Dataset (PHD) for Watersheds from LIDAR Surveys
73. Project 2.A.5 Philippine Renewable Energy Resources Mapping from LIDAR Surveys
74. Project 2.B.1 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Northern Luzon (Region 1)
75. Project 2.B.2 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 2 and Abulog River Basin in Region 1
76. Project 2.B.3 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 3 and Pangasinan
77. Project 2.B.4 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: MIMAROPA and Laguna (Region 4)
78. Project 2.B.5 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: CABARZON (Region 4A except Laguna)
79. Project 2.B.6 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Bicol (Region 5)
80. Project 2.B.7 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Western Visayas (Region 6)
81. Project 2.B.8 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Central Visayas (Region 7)
82. Project 2.B.9 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Eastern Visayas (Region 8)
83. Project 2.B.11 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Northern Mindanao (Region 10)
84. Project 2.B.12 LiDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Selected Sites in Region 10 and ARMM
85. Project 2.B.13 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Davao Region / Southern Mindanao (Region 11), South Cotabato and Sarangani
86. Project 2.B.14 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Mindanao: CARAGA Region (Region 13)
87. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS)  
Project 1. Development of Portable Surface Plasmon Resonance MIP-based Sensor for Detection of Histamine in Shrimps
88. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS)  
Project 2. Development of Sensitive Prototype Sensor for Monitoring Insecticide Residues in Fruits and Vegetables to Address Current MRLs

89. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS) Project 3. Development of Potentiometric-MIP Test Kit for the Detection of Clenbuterol in Meat
90. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS) Project 4. Development of Electrochemical Sensor Platform for Meat and Fish Freshness Monitoring
91. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS) Project 5. The Development of Portable Detection Systems for Nitroimidazoles in Hog Urine and Piggery Run-off Water
92. Sensors for Agricultural and Fishery Ecosystems and Harvests Safety (SAFEHarvestS) Project 6. Molecularly Imprinted Polymer Modified-Carbon Paste Electrodes (MIP-CPEs) as Multi-analyte Sensor for the Detection of Organophosphorus Pesticides Chlorpyrifos and Fenitrothion and Triazine Herbicide Atrazine
93. Radiation-induced grafting of nonwoven fabrics for wastewater treatment to meet Class C effluent heavy metal standards
94. Fabrication of Supercapacitors Using Indigenous Textiles as Electrode Materials
95. Project 2. Prototyping of a Diesel-Electric Parallel-Series Hybrid Vehicle for Public Transportation
96. Synthesis and Characterization of Novel Metal Nanoparticle-doped Electroactive Polymer Materials and Their Possible Application for Gas Sensing
97. Temporal Distribution and Transboundary Transport of Atmospheric Fine Particles across Bashi Channel, Taiwan Strait, and South China Sea
98. Deployment of a Low-Cost Modular Type Rainwater Collection System using Locally Available Materials
99. Contactless Apprehension of Traffic Violators on 24-Hour Basis and All-Vehicle Detection System (CATCH-ALL)
100. Integrated Scenario-based Assessments of Impacts and Hazards (ISIAH)
101. Pilot Plant for the Production of Organo Mineral Products for Effective Wastewater Treatment and Septic System Management
102. Development of Wireless Sensory Network System for Structural Integrity Monitoring of Bridges (SMART BRIDGE)
103. Piloting and Market Validation of the UP Technologies on Rapid Electric Vehicle Charging or CharM (Charging in Minutes) in Cauayan City, Isabela for Progressive SMARTER City
104. Development of a Cost-Effective Colorimetric Packaged/Frozen Fish Freshness Sensor Using Food-Compatible Materials
105. Embedding of Functional Materials onto Paper for Antimicrobial and Electromagnetic Shielding Applications
106. Performance Testing and Evaluation of Prototype Trainset
107. Green Synthesis of Carbon Quantum Dots from Biowaste for Biomedical and Industrial Applications
108. Forward Osmosis System using locally made membrane from Nata-de-coco for the production of rehydration water and application for desalination
109. Prototype Development and Field Testing of Mosquito-Repellent Textile
110. Upgrading the PNRI Neutron Laboratory for Neutron Physics and Dosimetry Research
111. PUP College of Engineering Sensors and Mechatronics Laboratory
112. Production of Nanocellulose from Indigenous Natural Fibers and Agricultural Wastes
113. Development of Interactive Software and Teaching Guides for Grades 7-10 Mathematics
114. Detection and Identification of Legitimate Public Utility Vehicles (PUVs) Along various road networks (DILAW)
115. Regional Scales of Variability in Precipitation (RSVP)
116. Pilot Testing and Technology Validation of NanoZeolite Processes
117. Technical and Economic Feasibility Study to Determine the Most Suitable Ironmaking Technology for Value-Adding of Philippine Magnetite Resources

118. Coal Ash as a Resource of Rare Earth and Strategic Elements in the Philippines: Amenability to Metallurgical Processing
119. Development of a Low-Energy Ion Source System for the Synthesis of Diamond--like Carbon Films
120. IAMBLUCECAM Project 1. Mangrove Remote Sensing Using LiDAR, Multispectral, and Hyperspectral Data (MaRS)
121. IAMBLUCECAM Project 2. LiDAR, Hyperspectral, and Sonar Remote Sensing of Seagrass Meadows (SeaRS)
122. IAMBLUCECAM Project 3. Geosimulation of Mangroves and Seagrass Vegetation Dynamics (GeoSiMAS)
123. IAMBLUCECAM Project 9. WebGIS for Mapping, Supporting Decision-making, and Promoting Ecological Services of Blue Carbon Ecosystems (BlueWebMapS)
124. Testing for Standardization and Optimization of five Coach Hybrid Road Train Phase III
125. System Expansion of the 120-Passenger per Coach Capacity Automated Guide-way Transit System
126. Automated Real-time Monitoring System for Ambuklao, Binga and San Roque Dams
127. Development of HFDR Ship Tracking Algorithm Software for Maritime Surveillance, Search and Rescue
128. Setting Up a Concrete Petrography Laboratory for Quality Control of Construction Projects
129. Development of a Functional and Durable Pervious Concrete Pavement for Local Roads and Parking Lots
130. Synergistic effect of Forward Osmosis and Capacitive De-Ionization for Water Purification and Recovery
131. Optimization of Ready-to-Drink Sweet Potato Leaf Extract (SPLE) Beverages through the UP-DOST Food Innovation Facility
132. Market Validation of the Automated Rapid Reef Assessment System (ARRAS)
133. ANEEME: Synthesizing and Sharing Animation Building Blocks for Rapid creation of 3D Motion Scenes
134. Human Hands as Input Device for an Immersive Virtual Reality Experience (VREX)
135. Project Tick-Tock Tech Talk
136. Cartography of Old Informs the New (COIN)
137. PNRI Graduate Student Research Grant Program
138. Modification of Road Train Energy Storage System Using Lithium Ion Batteries
139. Dried Cassava Grates Processing and System Optimization (TECHNICOM)
140. Harmonization of Food Safety Training Modules for Food Manufacturing
141. Design, Fabrication and Performance Evaluation of Blacksand Collectors
142. Establishment of the Mindanao University of Science and Technology Digital Incubation Hub
143. Deployment of Early Warning Systems in Disaster-prone Areas
144. Chemical Sensors for Mine Site Monitoring Project 3. Gaseous Elemental Mercury Sensors for Atmospheric Monitoring
145. Chemical Sensors for Mine Site Monitoring Project 4. Integrated Sensing System Using Mobile and Cloud Technologies for Mining and Nearby Communities
146. Chemical Sensors for Mine Site Monitoring Project 5. Data Integration and Visualization of Sensor Output for Mine Site Monitoring
147. Sustainability of ADMATEL for the Semiconductor and Electronics and Other Related Industries — Phase 6 (OPERATION OF ADMATEL)
148. Development of a Compact Wastewater Treatment System Enhanced with Bioaugmentation Technology for Quick Service Restaurant (QSRs)
149. Characterization of Mercury Fractionation and Distribution on Artisanal Gold Mine Tailings in Key Areas of Mindanao and its Implication for Mercury Detoxification
150. Development of Material Science and Polymer Chemistry Laboratory
151. Upgrading the Operation, Logistics, Payment Solutions and Marketing of oneSTore (An E-commerce Web Platform for Micro, Small and Medium Enterprises)

152. Development of Physarum Polycephalum Powered Actuators for a Microfluidic Mixer  
Project 1. Development of a Microgear Actuator Powered by Physarum Polycephalum
153. Development of Physarum Polycephalum Powered Actuators for a Microfluidic Mixer  
Project 2. Development of a Hybrid Physarum Polycephalum Controlled Micro-valve

**PCIEERD Research Priorities in the Harmonized National R&D Agenda (HNRDA)**

|   | <b>PCIEERD Research Areas</b>                 | <b>With New/Ongoing Projects</b> |
|---|---|----------------------------------|
| 1 | Food and Nutrition Security                   | X                                |
| 2 | Countryside Development                       | X                                |
| 3 | Competitive Industries                        | X                                |
| 4 | Delivery of Social Services                   | X                                |
| 5 | Intelligent Transportation Solutions          | X                                |
| 6 | Renewable Energy and Energy Storage Solutions | X                                |
| 7 | Human Security                                | X                                |

## **Partnerships with Public and Private Stakeholders and International Organizations**

1. Adamson University (AdU)
2. Aklan State University (ASU)
3. Antipara Exploration, Inc.
4. Asian Institute of Management (AIM)
5. Ateneo De Davao University (ADDU)
6. Ateneo De Manila University (ADMU)
7. Ateneo De Zamboanga University (ADZU)
8. Bataan Peninsula State University (BPSU)
9. Batangas State University
10. Benguet State University (BSU)
11. Bicol University (BU)
12. Bulacan State University
13. Cagayan State University (CSU)
14. Camarines Sur Polytechnic Colleges (CSPC)
15. Caraga State University (CarSU)
16. Cavite State University (CvSU)
17. Cebu Institute of Technology – University (CIT-U)
18. Central Luzon State University (CLSU)
19. Central Mindanao University (CMU)
20. Central Philippines University (CPU)
21. Citizen's Support Your Navy Foundation Phils., Inc.
22. Cropital Enterprises Corporation
23. De La Salle University (DLSU)
24. Department of Information and Communications Technology (DICT)
25. Department of National Defense (DND)
26. Development Academy of the Philippines (DAP)
27. Don Mariano Marcos Memorial State University (DMMMSU)
28. Easybus PH, Inc.
29. Edusuite, Inc.
30. Farmwatch Solutions, Inc.
31. FEATI University
32. Food Development Center - National Food Authority
33. Futuristic Aviation and Maritime Enterprise, Inc. (FAME)
34. Grayscale Marketing Consultancy
35. Hiraya Technology Solutions, Inc.
36. Holy Angel University (HAU)
37. Ideaspace Foundation Inc. through QBO Innovation Hub
38. Infodynamics Technologies
39. Isabela State University (ISU)
40. Kinovette Scientific Solutions Co.
41. MachiBox Inc.
42. Mapua Institute of Technology (MIT)
43. Marinduque State College (MSC)
44. Mariners Polytechnic Colleges Foundation
45. MATA VR
46. Mind Museum
47. Mindanao Autonomous College Foundation, Inc. (MACFI)
48. Mindanao Development Authority (MinDA)
49. Mindanao State University - General Santos City
50. Mindanao State University - Iligan Institute of Technology (MSU-IIT)
51. Mines and Geosciences Bureau (MGB)
52. Miriam College
53. National Irrigation Administration (NIA)

54. National Water Resources Board (NWRB)
55. Northwest Samar State University (NwSSU)
56. Palawan State University
57. Pampanga State Agricultural University (PSAU)
58. Pangasinan State University (PSU)
59. Philippine Foundation for Science and Technology (PFST)
60. Po-lite Technology Inc.
61. Polytechnic University of the Philippines (PUP)
62. Restograph Inc.
63. Rise Against Hunger, Philippines Inc.
64. Rizal Technological University (RTU)
65. Rurok Industries
66. Saint Louis University (SLU)
67. Samar State University (SSU)
68. Senti Techlabs Inc.
69. Silliman University
70. Smartfox Data Solutions Inc.
71. Sultan Kudarat State University (SKSU)
72. Tactiles Corporation
73. Technological Institute of the Philippines (TIP)
74. Technological University of the Philippines Visayas (TUPV)
75. Tekton Geometrix, Inc.
76. Toon City Academy
77. University of Asia and the Pacific (UA&P)
78. University of Cordilleras
79. University of Mindanao
80. University of Perpetual Help System - Dalta
81. University of San Carlos (USC)
82. University of San Jose Recoletos (USJ-R)
83. University of Santo Tomas (UST)
84. University of Science and Technology of Southern Philippines
85. University of Southeastern Philippines
86. University of Southern Mindanao (USM)
87. UP Baguio
88. UP Cebu
89. UP Diliman
90. UP Los Baños
91. UP Mindanao
92. UP Open University
93. UP Visayas
94. Wela School System
95. Wesleyan University of the Philippines (WUP)
96. West Visayas State University
97. Western Mindanao State University (WMSU)
98. Western Philippines University (WPU)

**Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST - PCIEERD)**

**Physical Report of Accomplishments (as of 2<sup>nd</sup> Quarter, FY 2019)**

**Program:** National Industry, Energy and Emerging Technology Sectors R&D Program

**Organizational Outcome:** Increased benefits to Filipinos from scientific knowledge and technological innovations for productivity and competitiveness



| <b>Output/Outcome Indicators</b>   | <b>Annual Targets</b> | <b>Accomplishments</b> | <b>Remarks</b>  |
|--|-----------------------|------------------------|---|
| <b>Output Indicators</b>   |                       |                        |   |
| Number of projects funded  | 130                   | 70                     | The total budget for the 70 projects amounts to P219.24M.   |
| Number of projects monitored   | 330                   | 238                    | For the 1 <sup>st</sup> quarter, the Council handled 316 new and ongoing projects. However, only 278 projects have been monitored since others have just started on the 2 <sup>nd</sup> quarter or the end of 2 <sup>nd</sup> quarter.              |
| Percentage of projects completed which are published in peer-reviewed journals, presented in national and/or international conferences, or with IP filed or approved | 50%                   | 38%                    | Out of the 223 completed projects assisted and monitored for the period 2016 – 2018, 84 projects were able to publish their papers in peer-reviewed journals, presented in national and/or international conferences, or have filed IP or approved. |
| <b>Outcome Indicators</b>  |                       |                        |   |
| Percentage of priorities in the Harmonized National R&D agenda (HNRDA) addressed   | 90%                   | 100%                   |   |

| Output/Outcome Indicators   | Annual Targets | Accomplishments | Remarks                            |
|---|----------------|-----------------|------------------------------------|
| Number of partnerships with public and private stakeholders and international organizations | 80             | 81              | See attached list of organizations |

Prepared by:

  
MS. TONY ROSE C. TUMANENG  
 Planning Officer II, PCMD

Approved by:

 8/15/18  
DR. ENRICO C. PARINGIT  
 Executive Director  


## **Partnerships with Public and Private Stakeholders and International Organizations**

1. Aklan State University (ASU)
2. Asian Institute of Management (AIM)
3. Ateneo De Davao University (ADDU)
4. Ateneo De Manila University (ADMU)
5. Ateneo De Zamboanga University (ADZU)
6. Bataan Peninsula State University (BPSU)
7. Batangas State University
8. Benguet State University (BSU)
9. Bicol University (BU)
10. Bulacan State University
11. Cagayan State University (CSU)
12. Camarines Sur Polytechnic Colleges (CSPC)
13. Caraga State University (CarSU)
14. Cavite State University (CvSU)
15. Central Luzon State University (CLSU)
16. Central Mindanao University (CMU)
17. Central Philippines University (CPU)
18. De La Salle University (DLSU)
19. Department of National Defense (DND)
20. Development Academy of the Philippines (DAP)
21. Don Mariano Marcos Memorial State University (DMMMSU)
22. Electric Vehicle Association of the Philippines (EVAP)
23. FEATI University
24. Food Development Center - National Food Authority
25. Futuristic Aviation and Maritime Enterprise, Inc. (FAME)
26. Grayscale Marketing Consultancy
27. Hiraya Technology Solutions, Inc.
28. Holy Angel University
29. IdeasSpace Foundation Inc. through QBO Innovation Hub
30. Infodynamics Technologies
31. Isabela State University (ISU)
32. Kinovette Scientific Solutions Co.
33. MachiBox Inc.
34. Manila Observatory
35. Mapua Institute of Technology (MIT)
36. Marinduque State College (MSC)
37. Mariners Polytechnic Colleges Foundation
38. Mind Museum
39. Mindanao Autonomous College Foundation, Inc. (MACFI)
40. Mindanao Development Authority (MinDA)
41. Mindanao State University - Iligan Institute of Technology (MSU-IIT)
42. Mines and Geosciences Bureau (MGB)
43. Miriam College
44. National Institute of Molecular Biology and Biotechnology (NIMBB)
45. National Irrigation Administration (NIA)
46. National Water Resources Board (NWRB)
47. Northwest Samar State University (NwSSU)
48. Pampanga State Agricultural University (PSAU)
49. Pangasinan State University (PSU)
50. Philippine Foundation for Science and Technology (PFST)
51. Philippine Genome Center
52. Restograph Inc.
53. Rise Against Hunger, Philippines Inc,

54. Rizal Technological University (RTU)
55. Rurok Industries
56. Saint Louis University
57. Senti Techlabs Inc.
58. Sultan Kudarat State University (SKSU)
59. Technological Institute of the Philippines (TIP)
60. Technological University of the Philippines Visayas (TUPV)
61. Tekton Geometrix, Inc.
62. Toon City Academy
63. University of Asia and the Pacific (UA&P)
64. University of Cordilleras
65. University of San Carlos (USC)
66. University of San Jose Recoletos (USJ-R)
67. University of Santo Tomas (UST)
68. University of Science and Technology of Southern Philippines
69. University of Southeastern Philippines
70. University of Southern Mindanao (USM)
71. UP Baguio
72. UP Cebu
73. UP Diliman
74. UP Los Baños
75. UP Mindanao
76. UP Open University
77. Wela School System
78. Wesleyan University of the Philippines (WUP)
79. West Visayas State University
80. Western Mindanao State University (WMSU)
81. Western Philippines University (WPU)

**Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development**  
**(DOST - PCIEERD)**

**Physical Report of Accomplishments (as of 1<sup>st</sup> Quarter, FY 2019)**


**Program:** National Industry, Energy and Emerging Technology Sectors R&D Program

**Organizational Outcome:** Increased benefits to Filipinos from scientific knowledge and technological innovations for productivity and competitiveness



| Output/Outcome Indicators  | Targets | Accomplishments | Remarks   |
|--|---------|-----------------|---|
| <b>Output Indicators</b>   |         |                 |   |
| Number of projects funded  | 130*    | 41              | The accomplishments consist only of PCIEERD – funded projects amounting to P80.63M.   |
| Number of projects monitored   | 330     | 64              | For the 1 <sup>st</sup> quarter, the Council handled 316 new and ongoing projects.  |
| Percentage of projects completed which are published in peer-reviewed journals, presented in national and/or international conferences, or with IP filed or approved | 50%     | 38%             | Out of the 223 completed projects assisted and monitored for the period 2016 – 2018, 84 projects were able to publish their results in peer-reviewed journals, presented in national and/or international conferences, or have filed IP or approved |
| <b>Outcome Indicators</b>  |         |                 |   |
| Percentage of priorities in the Harmonized National R&D agenda (HNRDA) addressed   | 90%     | 100%            |   |
| Number of partnerships with public and private stakeholders and international organizations  | 80*     | 81              | See attached list of organizations  |

\*Note: Reflected target is based on the requested revision from the Senate of the Philippines.

**Prepared by:**

  
**MS. TONY ROSE C. TUMANENG**  
Planning Officer II, PCMD

**Approved by:**

  
**DR. ENRICO C. PARINGIT**  
Executive Director  


**List of Funded Projects  
(January – March 2019)**

|   | <b>Project Title</b>  | <b>Implementing Agency</b>                                    |
|---|---|---|
| <b>PCIEERD-GIA Projects</b>   |   |   |
| 1   | Angular Goos-Hänchen Shift: An Optical Phenomena for Ultra Thin Film Thickness Measurement  | UP Diliman  |
| 2   | Establishing an Environment-Friendly Chromium Plating Process Using Generation Ionic Liquids  | UP Diliman  |
| <b><i>Geospatial Monitoring System for High Value Projects funded by DBM Program</i></b>  |   |   |
| 3   | Project 1. Monitoring and Assessment of Planting Activities and other Applications (MAPA2)  | UP Diliman  |
| 4   | Project 2. Remote Assessment for Irrigation Networks (RAIN)   | UP Diliman  |
| 5   | Validation and Turnover of the Hybrid Electric Train (HET)  | Metals Industry Research and Development Center (MIRDC)       |
| 6   | Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring   | De La Salle University (DLSU)                                 |
| <b><i>Comprehensive Evaluation of Critical Infrastructures and Construction Raw Materials in the Philippines Using Concrete Petrography</i></b>   |   |   |
| 7   | Project 1. Concrete Petrography as a Quality Assessment Tool of Hardened Concrete from Lifeline Structures in the Philippines                                       | UP Diliman  |
| 8   | Project 2. Geological, Chemical and Physical Evaluation of Concrete Raw Materials Used in Critical Philippine Infrastructures                                       | UP Diliman  |
| 9   | CATfish: A Modular Mini-Autonomous, Underwater Vehicle (AUV) initially submitted as (Remotely operated underwater vehicle (ROV-One))                                | UP Diliman  |
| <b><i>Analyzing CORDEX - SEA Regional Climate Simulations for Improved Climate Information over the Philippines: SST Influence, Variability and Extremes, Tropical Cyclone Activity</i></b> |   |   |
| 10  | Project 1. Analysis of the Influence of Sea Surface Temperature Representation in Downscaled Regional Climate Using the SEACLID/CORDEX – Southeast Asia Simulations | Manila Observatory  |
| 11  | Project 2. Multi-temporal and Extremes Analysis of Modeled Climatology over the Philippines in the SEA CORDEX Domain  | Manila Observatory  |
| 12  | Project 3. Detecting Tropical Cyclones in a Downscaled Regional Climate Model for CORDEX – SEA  | Manila Observatory  |
| 13  | Liquefaction Hazard Assessment for Resilient Schools in GMMA: A Liquefaction Probabilistic Model using Non-Invasive Geophysical Techniques and Limited Probe Hole   | Philippine Institute of Volcanology and Seismology (PHIVOLCS) |
| <b><i>PH UK Newton Agham Joint Cooperation Program on Understanding the Impacts of Hydrometeorological Hazards in South East Asia</i></b>   |   |   |
| 14  | SCaRP: Simulating Cascading Rainfall-triggered Landslide Hazards in the Philippines   | Mapua Institute of Technology (MIT)                           |
| <b><i>Development of a fixed wing short take-off and landing (STOL) unmanned aerial vehicle (UAV) for disaster risk reduction and management</i></b>  |   |   |
| 15  | Project 1. Design and fabrication of an airframe for a medium-range, short take-off and landing UAV   | FEATI University  |
| 16  | Project 2. Development of a Flight Controller for a Modular UAV System  | De La Salle University (DLSU)                                 |

|  | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|--|---|--|
| 17   | Project 3. Cooperative UAV-UGV Missions and Applications with Custom Communications and Imaging Capabilities  | Ateneo De Manila University (ADMU)                                   |
| 18   | Mapping of active offshore faults for resilient coasts  | UP Diliman   |
| 19   | Specific Earthquake Ground-Motion to help enhance the seismic resiliency of residential and medium-to-high rise buildings in Metro Cebu and Metro Davao                         | Philippine Institute of Volcanology and Seismology (PHIVOLCS)        |
| <b><i>Master of Research and Development Management</i></b>  |   |  |
| 20   | Project 2. Course Material Development for the Master of Research and Development Management  | UP Open University   |
| 21   | Metrology and War on Drugs: Correct Quantity and Right Decision   | Industrial Technology Development Institute (ITDI)                   |
| <b><i>3R Approach to Sustainable Management of Nickel Laterite Ore Mining</i></b>  |   |  |
| 22   | Project 1. Utilization of Nickel Laterite Ore rock (low grade) for various applications: Acid Mine Drainage treatment and Carbon Sequestration                                  | De La Salle University (DLSU)  |
| 23   | Project 4. Recycling of silt and spent residue from reprocessing as raw materials for geopolymer composite  | Central Mindanao University (CMU)                                    |
| 24   | Pilot Scale Production of Nickel Pig Iron from Low Grade Laterite Ores  | Mines and Geosciences Bureau (MGB)                                   |
| <b><i>Processing of Bio-based Polyols and Polyurethanes for Industrial Applications Program</i></b>  |   |  |
| 25   | Project 1. Production of Bio-based Polyols from Lignocellulosic Biomass   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 26   | Project 2. Development of Polyurethane-based Packing Materials and Anti-corrosive Coatings from Vegetable Oil   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 27   | Development of Design Prototypes for Government Agencies' Uniforms to Promote Mainstreaming of Natural Fibers and Local Weaves  | Philippine Textile Research Institute (PTRI)                         |
| 28   | Enhancement, Field Validation and Market Readiness Detection of DNA-based Nanobiosensor for the E. coli, E. coli 0157:H7 and Salmonella enterica in Food, Feed and Farm Produce | National Institute of Molecular Biology and Biotechnology (NIMBB)    |
| <b><i>Higher Education Institution Readiness for Innovation &amp; Technopreneurship (HEIRIT) Development Program for Starting TBIs</i></b> |   |  |
| 29   | Establishment of DOST-T.I.P. Technopreneurship and Innovation Center  | Technological Institute of the Philippines (TIP)                     |
| 30   | Establishment of the DOST-Bicol University Technology Business Incubation (DOST-BU TBI) Center for Bicol Region   | Bicol University (BU)  |
| 31   | Technology Business Incubator Establishment at Saint Louis University (SLU) Technohub   | Saint Louis University   |
| 32   | Establishment of TBI Center at Miriam College - Henry Sy, Sr. Innovation Center   | Miriam College   |
| 33   | Establishment of TBI center for the University of the Cordilleras   | University of the Cordilleras  |
| 34   | Establishment of DOST-BulSU BARAS TBI (Business Assistance for Regional Acceleration and Sustainability Technology Business Incubator)  | Bulacan State University   |
| 35   | Establishment of AgiLAB: The USEP Technology Business Incubation Facility and Services for IoT,   | University of Southeastern Philippines                               |

|    | <b>Project Title</b>   | <b>Implementing Agency</b>                                 |
|----|--|--|
|    | Industrial Technology & Systems Application Development                        |  |
| 36 | Establishment of the DOST-TUPV HIVE (Hub for Innovation and Value Engineering) | Technological University of the Philippines Visayas (TUPV) |
| 37 | Financial Support to Regional Consortia Activities                             | Consortia Member Institutions                              |
| 38 | Development of Municipal e-Governance Systems through ICT                      | Camarines Sur Polytechnic Colleges (CSPC)                  |
| 39 | Human Resource Development Program   | Multiagency  |
| 40 | Young Innovators Program   | Multiagency  |
| 41 | Financial Assistance for Information Dissemination and Promotion               | Multiagency  |

**List of Monitored Projects  
(January – March 2019)**

|   | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|---|---|--|
| 1   | ADMATEL Expansion and Business Continuity   | Industrial Technology Development Institute (ITDI)                   |
| 2   | Application of Predictive Data Analytics on Multivariate Analysis of Methamphetamine-HCl Chemical Fingerprints                                    | Industrial Technology Development Institute (ITDI)                   |
| 3   | Generalized Automated Microfluidics and Micro-actuator Assembly (GAMMA)   | UP Diliman   |
| <b><i>EPDC as Platform for Innovation and Collaboration (EPIC)</i></b>  |   |  |
| 4   | Project 2. Electronics Product Inclusive Innovation Center (EPIIC)  | Advanced Science and Technology Institute (ASTI)                     |
| <b><i>μC-IC: Design of Microcontroller Integrated with Energy Harvesting and Power Management</i></b>                                 |   |  |
| 5   | Project 1. Development of Microprocessor for Wireless Sensor Network Application  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 6   | Project 2. Power Management Unit using Low Drop-out Regulator and Switched Capacitor DC-DC Converters   | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 7   | Project 3. Design of Indoor Light Energy Harvesting for Wireless Sensor Network Applications  | Mindanao State University - Iligan Institute of Technology (MSU-IIT) |
| 8   | Development of Data Analytics-Ready Info Unified System (DARIUS) for Agile Delivery of Regional Services  | DOST Region IV-A   |
| 9   | Fringe-area Data Access by Transient Altitude Provision   | De La Salle University (DLSU)  |
| 10  | Up-Scaled Solution-Phase Synthesis of Metal Nanowires and its Application in Transparent Metal Nanowire Touch Panel                               | UP Diliman   |
| 11  | Development of a Raman Microscopy and Spectroscopy (RMS) Setup  | UP Diliman   |
| <b><i>Sustained Support for Local Space Technology &amp; Applications Mastery, Innovation and Advancement (STAMINA4Space)</i></b>     |   |  |
| 12  | Project 2. Building PHL-50: Localizing the Diwata-1 and Diwata-2 Bus Systems as the Country's Space Heritage 50-kg Microsatellite Bus (LoKAL)     | UP Diliman   |
| 13  | Center for Astronomy Research and Development: Astronomical Near-Earth Observation Light Pollution (ANEO-LiPo)                                    | Rizal Technological University (RTU)                                 |
| 14  | Remote Sensing and Data Science: DATOS Helpdesk   | Advanced Science and Technology Institute (ASTI)                     |
| <b><i>GeoSafer Mindanao Program (ZAMBASULTA, Northern Mindanao/ Cotabato, Agusan, Western Mindanao and Southeastern Mindanao)</i></b> |   |  |
| 15  | Project 2. Geo-SAFER Northern Mindanao/Cotabato – Systematic Assessment of Flood Effects and Risks in Northern Mindanao and Cotabato, Philippines | Central Mindanao University (CMU)                                    |
| 16  | Project 3. Geo-SAFER Agusan – Systematic Assessment of Flood Effects and Risks in the Agusan River Basin, Caraga Region, Mindanao, Philippines    | Caraga State University (CarSU)                                      |

|   | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|---|---|--|
| 17  | Project 5. Geo-SAFER: Southeastern Mindanao - Systematic Assessment of Flood Effects and Risks in Southeastern Mindanao                       | UP Mindanao  |
| 18  | Investigation and numerical modeling of Philippine tsunamis based on historical, geomorphological and geological evidence of past earthquakes | UP Diliman   |
| 19  | The Use of Radon Technique in Mapping Geological Faults in the Philippines  | Philippine Nuclear Research Institute (PNRI)   |
| 20  | Automated Real-Time Monitoring System (ARMS) for Magat Dam  | Mapua Institute of Technology (MIT)  |
| 21  | Metro Manila Transportation Network: Big Data Analytics and Applications (MMTN:BDAA)  | De La Salle University (DLSU)  |
| 22  | Prototype Development of Severe Weather Amphibious Navigator Using Local Abaca Composites   | Wesleyan University of the Philippines (WUP)   |
| 23  | TITAN: Vision-based Traffic Information & Analysis  | De La Salle University (DLSU)  |
| 24  | Design and Development of UP Bike Share System  | UP Diliman   |
| 25  | Engineering the Public Utility Vehicles (PUVs) Using an OEM Vehicle Platform  | UP Diliman   |
| 26  | Recycling and Recyclability Index for End-of-Life Jeeps   | University of Asia and the Pacific (UA&P)  |
| 27  | Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring   | De La Salle University (DLSU)  |
| <b><i>Synergistic Capacity Advancement for the Management of Laguna Lake: SCALE</i></b>                           |   |  |
| 28  | Project 1. Antibiotics, Endocrine Disruptors and Heavy Metals in Laguna Lake Water: Impacts on Food and Water Security                        | UP Diliman   |
| <b><i>Assessment of Metal Content in Agricultural Products and Its Environment in Volcanic Impacted Areas</i></b> |   |  |
| 29  | Project 1. OneLab Capability Assurance System for Metal Content Assessment in Agricultural Produce, Water and Environmental Samples           | Industrial Technology Development Institute (ITDI)   |
| 30  | Project 3. Household and Community Based Filters for Metals in Water  | Industrial Technology Development Institute (ITDI)   |
| 31  | Development of Ready-to-Eat Corn Grit Meals   | UP Diliman   |
| <b><i>Food Manufacturing: Establishment of Halal Assurance Systems for Food</i></b>                               |   |  |
| 32  | Establishment of Halal Assurance System for Bakery Products   | Industrial Technology Development Institute (ITDI)   |
| 33  | Technical Guidelines Development for Minimally Processed Halal Chicken and Chicken By-Products (Edible Giblets)                               | Industrial Technology Development Institute (ITDI)   |
| 34  | Development of Emulsified Meat Products (Sausage, Nuggets, and Burgers)   | Industrial Technology Development Institute (ITDI)<br><br>with University of Southern Mindanao (USM) |
| <b><i>Integrated Food Safety Program</i></b>  |   |  |
| 35  | DOST Food Safety Human Resource Development Project   | DOST Region IV-A   |
| 36  | Upgrading and Enhancing the Capacity of the Packaging Technology Division in Packaging Research and Innovation                                | Industrial Technology Development Institute (ITDI)   |

|    | <b>Project Title</b>  | <b>Implementing Agency</b>   |
|----|---|--|
|    | <b><i>Product Development and Utilization Program of Abalone in MIMAROPA</i></b>  |  |
| 37 | Development of Food and Non-Food Products from Abalone  | Marinduque State College (MSC)<br>Western Philippines University (WPU) |
| 38 | Performance Evaluation of Dipstick Assay for the Detection of Salmonellae in Selected Food Matrices   | National Institute of Molecular Biology and Biotechnology (NIMBB)      |
| 39 | Development of an Effective Distribution System for RTE Retort Foods (Chicken Arroz Caldo and Smoked Fish Rice Meal) to Mitigate the Magnitude of Distress for Calamity Survivors and Providers of Services | Industrial Technology Development Institute (ITDI)                     |
| 40 | Design and Improvement of Gong Fabrication Processes Through S&T Intervention   | Metals Industry Research and Development Center (MIRDC)                |
|    | <b><i>I-SALT: Improving Productivity and Efficiency of Local Salt Producers towards a Self-Reliant Philippines in 2020</i></b>  |  |
| 41 | Project 1. Design, Prototyping of Salt Processing Equipment (Washer, Dryer, Iodizer, Crystallizing Pan, Furnace, Concentrator (Ion exchange membrane)   | Industrial Technology Development Institute (ITDI)                     |
| 42 | Research and Development Project to Rehabilitate and Enhance Productivity in Lahar and Ash-Laden Areas in Central Luzon   | Central Luzon State University (CLSU)                                  |
| 43 | Tracing the Pathways of Mercury Concentration in Mined-Out Area   | Philippine Nuclear Research Institute (PNRI)                           |
|    | <b><i>Natural Dyes and Colorants R&amp;D Program</i></b>  |  |
| 44 | Project 2. Development of Natural Colorants for Cosmetics   | Industrial Technology Development Institute (ITDI)                     |
| 45 | Polyhydroxyalkanoate (PHA) Production from Agricultural Residues  | UP Los Baños   |
|    | <b><i>Nutrition Intervention Model in Time of Man-Made Calamities – A Quick Response to Emergency</i></b>   |  |
| 46 | Project 1. Production of Nutritional Food Products for Conflict Stricken Areas  | Food and Nutrition Research Institute (FNRI)                           |
| 47 | Enhancement, Field Validation and Market Readiness Detection of DNA-based Nanobiosensor for the E. coli, E. coli 0157:H7 and Salmonella enterica in Food, Feed and Farm Produce                             | National Institute of Molecular Biology and Biotechnology (NIMBB)      |
| 48 | CONDAMA & EEMA - Artificial Intelligence Vision System for Retail Analytics   | UP Diliman   |
| 49 | Prototype Development of Semi-Automated Foam Shredder Equipment   | Holy Angel University  |
| 50 | Enhancement of Prototype and Market Readiness of R-TAP (an advanced pressure management system for water utilities)   | Hiraya Technology Solutions, Inc.                                      |
| 51 | Establishment of the Technology Management System and Structure of the Ateneo de Manila University  | Ateneo De Manila University (ADMU)                                     |
| 52 | Geophysical Exploration Instruments with Micro-seismic Imaging and Tomography for Energy Exploration in the Philippines   | Tekton Geometrix, Inc.   |
| 53 | Establishment of the AIM-Dado Banatao Incubator   | Asian Institute of Management (AIM)                                    |

|  | <b>Project Title</b>   | <b>Implementing Agency</b>                         |
|--|--|--|
| 54   | Pilot Implementation of ITDI's Pre-Commercialization Tools/Strategies for Effective Transfer and Commercialization of Generated Technologies and Intellectual Properties | Industrial Technology Development Institute (ITDI) |
| 55   | Smart Vision: AI-Guided Vision System for the Blind  | Grayscale Marketing Consultancy                    |
| <b><i>Infrastructure Development Program (IDP)</i></b> |  |  |
| 56   | Upgrading of the PNRI Nuclear Training Center Laboratory Facility  | Philippine Nuclear Research Institute (PNRI)       |
| 57   | UP Cebu Cybersecurity Research and Extension Center  | UP Cebu  |
| 58   | Establishment of an Additive Manufacturing Research Laboratory   | Bataan Peninsula State University (BPSU)           |
| 59   | Establishment of Renewable Energy Laboratory and Demonstration Park  | Isabela State University (ISU)                     |
| 60   | Development of Future Building Materials and Structures (FBMS) Laboratory  | Northwest Samar State University (NwSSU)           |
| 61   | Development of Geographic Information System (GIS) Innovation Laboratory (GIS InnoLab)   | University of Cordilleras                          |
| 62   | Establishment of CvSU SiMM (Simulation, Modeling and Measurement) Laboratory   | Cavite State University (CvSU)                     |
| 63   | Establishment of a Plasma Physics Laboratory for Materials Processing Applications   | UP Baguio  |
| 64   | Standards & Testing Automated Modular Platform (STAMP)   | UP Diliman   |

**List of Projects Completed with Peer-reviewed journals, Presented in National and/or International Conferences**

1. BAYANIHANETS Project 1. Development of a Multipath Transport Protocol for Cooperative Community Networks
2. BAYANIHANETS Project 2. ARC: An Application Framework for Robust Communications Transport over Community Networks
3. BAYANIHANETS Project 3. Development of Routing Metrics for High Throughput and Congestion Free Routing over Wireless Community Mesh Networks
4. Biodiversity Assessment of Terrestrial and Aquatic Ecosystems in Selected Mining Environs in Mindanao Project 2. Assessment of Aquatic Biodiversity in Selected Mining Environs in Mindanao
5. Black Sand Mineral Characterization
6. Coal Ash as a Resource of Rare Earth and Strategic Elements in the Philippines: Amenability to Metallurgical Processing
7. Computing and Archiving Research Environment (CoARE)
8. Contactless Apprehension of Traffic Violators on 24-Hour Basis and All-Vehicle Detection System (CATCH-ALL)
9. CRAVAT Project 1. FISHDROP 360: Development Tools for Improved Monitoring of Reef Fish Communities
10. CRAVAT Project 2. Teardrop Upgrade
11. CRAVAT Project 3. Integration of ARRAS and CRAVAT Tools
12. Design and Development of Aerial Mapping and Imaging Systems and Standards
13. Design, Fabrication and Performance Evaluation of Blacksand Collectors
14. Design, Fabrication, and Evaluation of Monitoring and Sampling Devices for Particulate Matter
15. Development and Deployment of Adaptive, Interactive, SMS-Based Modules for English
16. Development of a Cost-Effective Colorimetric Packaged/Frozen Fish Freshness Sensor Using Food-Compatible Materials
17. Development of An Automated Multi-Commodity Heat Pump Dryer
18. Development of Competence of the DOST Food Innovation Centers (FICs) and Recognition of Most Innovative Products
19. Development of Ink Using Carbon from Straight Pyrolysis of Glycerol as Electrodes in Printed Electronics
20. Development of Interactive Software and Teaching Guides for Grades 7-10 Mathematics
21. Development of Wireless Sensory Network System for Structural Integrity Monitoring of Bridges (SMART BRIDGE)
22. DREAM Project 1. LIDAR and SAR Data Acquisition
23. DREAM Project 2. LIDAR and SAR Data Calibration and Validation
24. DREAM Project 3. Extracting Digital Elevation Models and Salient Features for Flood Modelling
25. DREAM Project 4. Integrating High Resolution Digital Elevation Models (DEMs) into GIS-based Flood Modelling
26. DREAM Project 5. Training for LIDAR Data Acquisition and Flood Modeling
27. Drought and Crop Assessment and Forecasting (DCAF)
28. Establishment of Centralized Facility of Ultra High Temperature/High Temperature Short time Pasteurizer for Milk, Coconut Water and Other Juices
29. Fabrication of a Solid-State Rechargeable Li-ion Battery Using Li<sub>7</sub>La<sub>3</sub>Zr<sub>2</sub>O<sub>12</sub> as Solid Electrolyte for Energy Storage Applications
30. Fabrication of Supercapacitors Using Indigenous Textiles as Electrode Materials
31. Forward Osmosis System using locally-made membrane from Nata-de-coco for the production of rehydration water and application for desalination
32. Hemicellulose Extraction, Process Development and Toxicological Evaluation of a Hemicellulose-chitosan/tripolyphosphate (polyphosphate) Nanocomposite Coating for the Postharvest-life Extension of Papaya (*Carica papaya* L.) Fruits

33. ITS Project 1. Advanced Traffic & Pollution Monitoring and Analysis System Based on GPS Trajectory Data, Air Quality Data and Engine Status Data collected from Taxis in Metro Manila (ATPMS) - Year 1 & 2
34. ITS Project 2. Development of a Customized Local Traffic Simulator - Year 1 & 2 (LOCALSIM)
35. MECO-TECO: Synthesis and Characterization of Novel Metal Nanoparticle-doped Electroactive Polymer Materials and Their Possible Application for Gas Sensing
36. Metal Bio-Indicator Plant Species of the Philippines
37. MiC Project 1. Interlaboratory Comparisons of Additives and Contaminants in Foods
38. Molecularly Imprinted Polymers (MIPs) for the Targeted Purification of Natural Compound
39. National Space Promotion, Advancement and Capability Expansion (SPACE) Development Program
40. MinERS Project A. Non-Hazardous Methods of Gold Extraction for Philippine Small-Scale Mining Applications
41. MinERS Project G. The Gold and Copper Chase: Life Cycle Analysis of Sustainable Small-Scale Production System
42. PCIEERD NSRI Research Grant
43. PHL-MICROSAT Project 4. Calibration and Validation of Remote Sensing Instruments for PHL.MICROSAT
44. Pilot Testing and Technology Validation of NanoZeolite Processes
45. Pre-positioning & Allocation of Relief Supplies GIS-Based Support System for Disaster Preparedness & Response
46. Production of Nanocellulose from Indigenous Natural Fibers and Agricultural Wastes
47. Production, Characterization and Application of Red Pigment Produced by *Monascus purpureus* M1018
48. Program for Computer Literacy (ComLit)
49. Molecular characterization of bacterial community from Manleluag alkaline spring through next-generation sequencing of 16S rDNA
50. Phil-LiDAR 1. Project 1.B.3 LIDAR Data Processing and Validation in Luzon: Region 3 and Pangasinan (Region 1)
51. Phil-LiDAR 1. Project 1.B.4 LIDAR Data Processing and Validation in Luzon: MIMAROPA and Laguna (Region 4)
52. Phil-LiDAR 1. Project 1.B.6 LIDAR Data Processing and Validation in Luzon: Bicol (Region 5)
53. Phil-LiDAR 1. Project 1.B.10 LIDAR Data Processing and Validation in Mindanao: Zamboanga Peninsula (Region 9)
54. Phil-LiDAR 1. Project 1.B.11 LIDAR Data Processing and Validation in Mindanao: Regions 10, 12, and ARMM
55. Phil-LiDAR 1. Project 1.B.12 LIDAR Data Processing and Validation in Mindanao: Selected Sites in Northern Mindanao (Region 10) and 11
56. Phil-LiDAR 1. Project 1.B.13 LIDAR Data Processing and Validation in Mindanao: Davao Region / Southern Mindanao (Region 11)
57. Phil-LiDAR 1. Project 1.B.14 LIDAR Data Processing and Validation in Mindanao: CARAGA Region (Region 13)
58. Phil-LiDAR 2, Project 2.B.1 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Northern Luzon (Region 1)
59. Phil-LiDAR 2. Project 2.B.2 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 2 and Abulog River Basin in Region 1
60. Phil-LiDAR 2. Project 2.B.3 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 3 and Pangasinan
61. Phil-LiDAR 2. Project 2.B.6 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Bicol (Region 5)
62. Phil-LiDAR 2. Project 2.B.10 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Zamboanga Peninsula (Region 9)
63. Phil-LiDAR 2. Project 2.B.12 LiDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Selected Sites in Region 10 and ARMM

64. Phil-LiDAR 2. Project 2.B.13 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Davao Region / Southern Mindanao (Region 11), South Cotabato and Sarangani
65. Phil-LiDAR 2. Project 2.B.14 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Mindanao: CARAGA Region (Region 13)
66. Project e-Bayanihan: A Nationwide Web - Mobile Based System for Participatory Disaster Management
67. Project Tick-Tock Tech Talk
68. Regional Scales of Variability in Precipitation (RSVP)
69. Optimization and Improvement of Process in the Production of Technically Specified Rubber and Demonstration of Improved Facilities in Zamboanga Peninsula
70. Smart Wire Project 1 - Energy Efficient Data Acquisition and Conditioning for the SmartWire Sensor Node Project
71. Smart Wire Project 3 - Energy Ultra-Low Power Computation and Communication for the SmartWire Sensor Node Project
72. Smart Wire Project 4 - Resilient Data Transport
73. Sonochemical Synthesis of Cobalt Oxide and Copper Oxide Nanostructures as Electrodes in Photoelectrochemical Water-Splitting Applications
74. Stealth Assessment of Student Conscientiousness, Cognitive-affective States, and Learning using and Educational Game for Physics
75. Strengthening SLSU's Capability in GIS Technologies in Support of Southern Leyte's Competitiveness and Development
76. Prototyping of a Diesel-Electric Parallel-Series Hybrid Vehicle for Public Transportation
77. Synergistic effect of Forward Osmosis and Capacitive De-Ionization for Water Purification and Recovery
78. System to Identify, Quantify and Map the Storm Surge Threat to Philippine Coasts
79. Temporal Distribution and Transboundary Transport of Atmospheric Fine Particles across Bashi Channel, Taiwan Strait, and South China Sea
80. Tidal Current Energy Integrated Resource Assessment and Spatial Planning Tool
81. UPLB Project 2. Bench-scale Production of Nanosensors for the Detection and Analysis of Arsenic in Contaminated Water
82. UPLB Project 3. Bench-scale Production of Hand-held Nanosensors for Methane Using Zinc Oxide Film
83. UPLB Project 4. Bench-Scaling of the Production of Cellulosic Nanocrystals from Kawayang-tinik (*Bambusa blumeana*) and Its Utilization for Renewable Nanomaterials
84. UPLB Project 5. Production of Nanosilica from Rice Hulls and Rice Hull Ash and Bench Scale Verification of the Production of Biodegradable Packaging Using Cassava Starch-RHA Nanosilica

**PCIEERD Research Priorities in the Harmonized National R&D Agenda (HNRDA)**

|   | <b>PCIEERD Research Areas</b>                 | <b>With New/Ongoing Projects</b> |
|---|---|----------------------------------|
| 1 | Food and Nutrition Security                   | X                                |
| 2 | Countryside Development                       | X                                |
| 3 | Competitive Industries                        | X                                |
| 4 | Delivery of Social Services                   | X                                |
| 5 | Intelligent Transportation Solutions          | X                                |
| 6 | Renewable Energy and Energy Storage Solutions | X                                |
| 7 | Human Security                                | X                                |

## **Partnerships with Public and Private Stakeholders and International Organizations**

1. Aklan State University (ASU)
2. Asian Institute of Management (AIM)
3. Ateneo De Davao University (ADDU)
4. Ateneo De Manila University (ADMU)
5. Ateneo De Zamboanga University (ADZU)
6. Bataan Peninsula State University (BPSU)
7. Batangas State University
8. Benguet State University (BSU)
9. Bicol University (BU)
10. Bulacan State University
11. Cagayan State University (CSU)
12. Camarines Sur Polytechnic Colleges (CSPC)
13. Caraga State University (CarSU)
14. Cavite State University (CvSU)
15. Central Luzon State University (CLSU)
16. Central Mindanao University (CMU)
17. Central Philippines University (CPU)
18. De La Salle University (DLSU)
19. Department of National Defense (DND)
20. Development Academy of the Philippines (DAP)
21. Don Mariano Marcos Memorial State University (DMMMSU)
22. Electric Vehicle Association of the Philippines (EVAP)
23. FEATI University
24. Food Development Center - National Food Authority
25. Futuristic Aviation and Maritime Enterprise, Inc. (FAME)
26. Grayscale Marketing Consultancy
27. Hiraya Technology Solutions, Inc.
28. Holy Angel University
29. IdeasSpace Foundation Inc. through QBO Innovation Hub
30. Infodynamics Technologies
31. Isabel State University (ISU)
32. Kinovette Scientific Solutions Co.
33. MachiBox Inc.
34. Manila Observatory
35. Mapua Institute of Technology (MIT)
36. Marinduque State College (MSC)
37. Mariners Polytechnic Colleges Foundation
38. Mind Museum
39. Mindanao Autonomous College Foundation, Inc. (MACFI)
40. Mindanao Development Authority (MinDA)
41. Mindanao State University - Iligan Institute of Technology (MSU-IIT)
42. Mines and Geosciences Bureau (MGB)
43. Miriam College
44. National Institute of Molecular Biology and Biotechnology (NIMBB)
45. National Irrigation Administration (NIA)
46. National Water Resources Board (NWRB)
47. Northwest Samar State University (NwSSU)
48. Pampanga State Agricultural University (PSAU)
49. Pangasinan State University (PSU)
50. Philippine Foundation for Science and Technology (PFST)
51. Philippine Genome Center
52. Restograph Inc.
53. Rise Against Hunger, Philippines Inc,

54. Rizal Technological University (RTU)
55. Rurok Industries
56. Saint Louis University
57. Senti Techlabs Inc.
58. Sultan Kudarat State University (SKSU)
59. Technological Institute of the Philippines (TIP)
60. Technological University of the Philippines Visayas (TUPV)
61. Tekton Geometrix, Inc.
62. Toon City Academy
63. University of Asia and the Pacific (UA&P)
64. University of Cordilleras
65. University of San Carlos (USC)
66. University of San Jose Recoletos (USJ-R)
67. University of Santo Tomas (UST)
68. University of Science and Technology of Southern Philippines
69. University of Southeastern Philippines
70. University of Southern Mindanao (USM)
71. UP Baguio
72. UP Cebu
73. UP Diliman
74. UP Los Baños
75. UP Mindanao
76. UP Open University
77. Wela School System
78. Wesleyan University of the Philippines (WUP)
79. West Visayas State University
80. Western Mindanao State University (WMSU)
81. Western Philippines University (WPU)