## INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE

2023 Completed Projects

| No.    |  |                     | Completion Date     |  | Status      |
|--------|--|---------------------|---------------------|--|-------------|
|        | Project Title  | Date Started        | Original            | Revised  |             |
| CHEMIC | ALS AND ENERGY DIVISION  |                     |                     |  |             |
| 1      | RDR-CED-2021-03  | 01-Jan-2021         | 31-Dec-2021         | 31-Mar-2023  | Completed   |
| _      | Development of Microcontroller & Minicomputer  |                     |                     |  |             |
|        | Applications for Selected Equipment units of the MMIC and a Bench-Scale Hydrothermal           |                     |                     |  |             |
|        | Carbonization Equipment of the CED Laboratory  |                     |                     |  |             |
| 2      | RDR-CED-2022-04 Screening of Biological Activities and Secondary                               | 1-Aug-2022          | 31-Jul-2023         | 31-Dec-23  | Completed   |
|        | Metabolites from Two (2) Endemic Species of  |                     |                     |  |             |
|        | Vanoverberghia (Zingiberaceae) and their Application as a Topical Product                      |                     |                     |  |             |
| 3      | RDR-CED-2023-01  | 01-Jan-23           | 31-Dec-23           |  | Completed   |
|        | Production of Fish Oil from by-products of Local   | 01-0411-25          | 31-DCC-23           |  | Completed   |
|        | Fish Processors and its Application in Personal Care Products                                  |                     |                     |  |             |
| 4      | RDR-CED-2023-02  | 01-Jan-23           | 31-Dec-23           |  | Completed   |
|        | Optimization Study on the Co-production of   |                     |                     |  | ·           |
| 5      | Activated Carbon and Bio-oil Spent Coffee Grounds<br>RDR-CED-2023-03                           | 1-Jan-2023          | 31-Dec-2023         |  | Completed   |
|        | Utilization of Okara byproduct from Taho/Tofu  | 1 0011-2020         | 0.1 200-2020        |  | - Completed |
|        | Production through the Development of<br>Stabilizer/Emulsifier for Personal Care Products      |                     |                     |  |             |
| 6      | RDA-CED-2022-01 Product Development of Okara:  | 1-Sep-2022          | 31-Aug-2023         | 31-Dec-2023  | Completed   |
| -      | From Soybean Processing By-Product to Hight  |                     | 3 3                 | 3 · 2 3 · 2 <b>3 · 2 3 · 2</b> |             |
|        | Energy Protein Ready to Drink Product  | IVIRONMENT AND BIOT | TECHNOLOGY DIVISION |  |             |
| 7      | RDR-EBD-2022-03  | 01-Jan-23           | 31-Dec-23           |  | Completed   |
|        | Microbial and Chemical Profile of Kombucha Tea   |                     |                     |  |             |
|        | made from Different Symbiotic Colonies of Bacteria and Yeasts (SCOBYs) in the Philippines      |                     |                     |  |             |
|        | Phase 2. Chemical Profile and Antioxidant Activity   |                     |                     |  |             |
| -      | of Kombucha (Year 2)   | 1-Jan-2022          | 21 Dog 22           |  | Completed   |
| 8      | RDR-EBD-2022-05 Carbon Capture using PDMS/PVDF thin film                                       | 1-Jan-2022          | 31-Dec-23           |  | Completed   |
|        | Composite Membranes  |                     |                     |  |             |
| 9      | RDR-EBD-2022-06 Operation of the DOST Sewage Treatment Plan                                    | 1-Jan-2022          | 31-Dec-23           |  | Completed   |
|        | (STP) and Development of Strategies for Water  |                     |                     |  |             |
|        | Reuse  |                     |                     |  |             |
| 10     | RDR-EBD-2022-07 Qualitative and Quantitative Assessment of                                     | 1-Jan-2022          | 31-Jun-23           | 31-Dec-23  | Completed   |
|        | Microplastics along the key sites of Laguna de Bay,  |                     |                     |  |             |
| 44     | Philippines RDR-EBD-2023-01  | 01-Jan-23           | 31 Dog 22           |  | Completed   |
| 11     | Utilization of Septic Sludge for Biogas and Compost  | U 1-Jan-23          | 31-Dec-23           |  | Completed   |
|        | Production using a Portable Biogas Digester  |                     |                     |  |             |
| 12     | RDR-EBD-2023-02<br>Utilization of Coffee Beans Waste for Enzyme                                | 01-Jan-23           | 31-Dec-23           | 31-Mar-2024  | Completed   |
|        | Production Using Isolated Fungal Strains   |                     |                     |  |             |
| 13     | RDR-EBD-2023-03<br>Implementation of an Effective Solid Waste                                  | 01-Jan-23           | 30-Sep-23           |  | Completed   |
|        | Management Program for ITDI: Part 1 - Assessment   |                     |                     |  |             |
|        | and conduct of Waste Analysis and  |                     |                     |  |             |
| 14     | Characterization Study (WACS) RDA-EBD-2022-01  | 17-Jan-2022         | 16-Jan-2023         |  | Completed   |
| '-     | Comparative Study Between Standard Methods and   | 17 3011-2022        | 10 3011-2020        |  |             |
|        | Philippine Made PM and CO Measuring Devices-Y1   |                     |                     |  |             |
| 15     | RDA-FPD-2021-06  | 1-Apr-2022          | 31-Mar-2023         |  | Completed   |
| 13     | Development of Competency on Establishment and   | 1-Apr-2022          | J I-IVIGI-ZUZU      |  | Completed   |
|        | Validation of Adequate Processes for Thermally<br>Processed Food                               |                     |                     |  |             |
| 16     | RDA-FPD-2021-09  | 1-Apr-2021          | 31-Mar-2022         |  | Completed   |
|        | Production of Dietary Fiber using Sugarcane  | ·                   |                     |  | F ****      |
|        | Bagasse from Raw Sugar Manufacturing   | 1-Apr-2022          | 31-Mar-2023         |  |             |
|        |  |                     |                     |  |             |
| 17     | RDR-FPD-2022-03  | 1-Apr-2022          | 31-Mar-2023         |  | Completed   |
|        | Improvement of Exterior Features of Existing Horizontal Water Spray Retort with Timing Control |                     |                     |  |             |
|        | System Upgrade   |                     |                     |  |             |
| 18     | RDR-FPD-2022-05 Ultrasonic Assissted Extraction (UAE) and                                      | 1-Apr-2022          | 31-Dec-2022         | 31-Mar-2023  | Completed   |
|        | Microencapsulation of Virgin Coconut Oil (VCO):  |                     |                     |  |             |
| L      | Study 2: Validation of UAE Process of VCO  | 4.5.1.0000          | 00 1 2222           |  |             |
| 19     | RDR-FPD-2022-01 Development of Shelf Stable Randang Sauce                                      | 1-Feb-2022          | 30-Jun-2023         |  | Completed   |
| 20     | RDR-FPD-2022-06  | 1-Oct-2022          | 30-Sep-2023         |  | Completed   |
|        | Safety and Quality Evaluation and Testing of DOST-   |                     |                     |  |             |
| 21     | ITDI Developed Cacao Roaster Equipment RDR-FPD-2023-05   | 1-Jan-2023          | 31-Dec-2023         |  | Completed   |
| 21     | Development of Shelf Stable Intermediate Moisture  | 1-1411-2023         | 31-060-2023         |  | Completed   |
|        | (IM) Chevon Products (Jerky and Chinese-Style  |                     |                     |  |             |
| 22     | Sausage) using Hurdie Technology<br>RDR-FPD-2023- 01   | 1-Jan-2023          | 31-Dec-2023         |  | Completed   |
| **     | Development and Pilot Scale Production of Shelf-   | 1 0011-2020         | 0.1 200-2020        |  | Jospiotod   |
|        | Stable Food Products as Ready Food Reserve   |                     |                     |  |             |
|        |  |                     |                     |  |             |

## INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE

2023 Completed Projects

|       | Project Title   | Date Started                  | Completion Date |             | Status    |
|-------|---|-------------------------------|-----------------|-------------|-----------|
| No.   |   |                               |                 |             |           |
|       |   |                               | Original        | Revised     |           |
| HEMIC | CALS AND ENERGY DIVISION  |                               |                 |             |           |
| 23    | RDR-FPD-2023-06 Test Marketing Implementation and Soft Launching of Thermally Processed Randang Sauce   | 1-Jul-2023                    | 31-Dec-2023     |             | Completed |
|       |   | MATERIAL SCIE                 | NCE DIVISION    |             |           |
| 24    | RDR-MSD-2023-01 Application of 3D Printing in Arts and Designs for Creative and Handicraft Industries: 3D Printing Application for Bespoke Designs in Baked Products                              | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 25    | RDR-MSD-2023-02 Application of 3D Printing in Arts and Designs for Creative and Handicraft Industries: 3D Printing Application in Designing Products for the Pottery Industry                     | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 26    | RDR-MSD-2023-03<br>Laboratory Scale Production of Porous Bi-phasic<br>Calcium Phosphate Bioceramic Orbital Implant<br>(Phase 1)   | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 27    | RDR-MSD-2023-04<br>Stereolithography-Fabricated All Ceramic Dental<br>Crown using Locally Available Materials (Year 1)  | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 28    | RDR-MSD-2023-05<br>Recycling of Postconsumer Multilayer Plastics<br>Packaging (PMPP) - Phase 1  | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 29    | RDR-MSD-2023-06 Cellulose Nanocrystals (CNC) derived from Ananas Comosus leaves for Industrial and Medical Applications: Phase 2-Functionalization and Applications Testing                       | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 30    | RDR-MSD-2023-07 Design, Optimization and Prototyping through Simulation and 3D Printing with PVDF/PES Membrane Development of a Hollow Fiber Membrane Module for Emergency Water Supply Treatment | 1-Jan-2023                    | 31-Dec-2023     |             | Completed |
| 31    | RDA-MSD-2023-05<br>Training of Trainers Program (ToT) on<br>Nanotechnology  | 1-May-23                      | 1-Jul-23        |             | Completed |
| 32    | RDA-MSD-2022-01<br>Nanotexturing of Stainless Steel 316L by<br>Electrochemical Etching for Biological Implants<br>(CRADLE Project)  | 1-Jan-2022                    | 31-Dec-2022     | 30-Sep-2023 | Completed |
| 33    | RDR-PTD-2021-04   | PACKAGING TECHN<br>1-Apr-2021 | 31-Mar-2022     |             | Completed |
| 55    | Development of Three (3) New RTE Disaster Relief Foods for Vulnerable Groups (elderly and children)   | 1-Apr-2022                    | 31-Mar-2023     |             | Completed |
| 34    | RDR-PTD-2022-04 Development of intelligent packaging colorimetric sensor as total volatile basic nitorgen (TVBN) indicator (Phase 2)  | 2-Feb-2022                    | 31-Dec-2023     |             | Completed |
| 35    | RDR-PTD-2021-02 Development of random vibration test procedures/methods using Acquired shock and vibration data in the last leg delivery of small products within Metro Manila                    | 1-Aug-2021                    | 30-Jun-2023     |             | Completed |
| 36    | RDR-PTD-2021-06 Preliminary Study on Epoxidized Soybean Oil Migrating from Metal Closure into Bottled Spanish- Style Sardines   | 1-Jul-2021                    | 28-Feb-2023     |             | Completed |
| 37    | RDR-PTD-2022-01 Development of Brand Name and Label Design for Unique Philippine Products (Phase 3)   | 2-Jan-2022                    | 30-Jun-2023     |             | Completed |
| 38    | RDR-PTD-2022-02 A Preliminary Study on the Exposure assessment of Filipino Consumers to phthalates migrated from plastic-based materials used as packaging for food and Beverages                 | 2-Feb-2022                    | 31-Dec-2023     |             | Completed |
| 39    | RDR-PTD-2022-06 Fabrication and Testing of Fiber – Based Cushion Pads and Partition Boards Derived from Pineapple Waste for Transport of Fresh Produce  | 2-Feb-2022                    | 31-Dec-2023     |             | Completed |
| 40    | RDR-PTD-2022-07 Utilization of Biochar as green active packaging in prolonging the overall freshness of high-value agricultural produce (Cavendish Banana and Okra)                               | 1-Apr-2022                    | 31-Aug-2023     |             | Completed |
| 41    | RDR-PTD-2022-08 Validation and Optimization of the Developed Packaging Technology for Pork Lechon (old title: Pilot Testing of Packaging Technology for Pork Lechon)                              | 01-Jun-2022                   | 30-Dec-2023     |             | Completed |

|        | INDUS  |                         | DEVELOPMENT INSTIT         | UTE         |           |
|--------|--|-------------------------|----------------------------|-------------|-----------|
|        |  | 2023 Comple             | eted Projects              |             |           |
|        |  |                         | Compl                      | etion Date  |           |
| No.    | Project Title  | Date Started            | Original                   | Revised     | Status    |
| CHEMIC | CALS AND ENERGY DIVISION   | Date Started            | Original                   | Reviseu     |           |
| OTTE I | DALO AND ENERGY DIVISION   |                         |                            |             |           |
| 42     | RDA-PTD-2021-01 Development and Field Testing of Retort Foods as Food Ration for Men in Uniform during Combat Operations and Other High Risk Operations                                      | 1-Feb-2021              | 31-Aug-2023                |             | Completed |
| 43     | RDA-PTD-2021-02<br>Pilot Testing of Packaging Technology Developed<br>for Frozen Durian using Locally Produced<br>Packaging Materials  | 16-Apr-2021             | Sept. 30, 2023             |             | Completed |
|        |  | STANDARDS AND           | TESTING DIVISION           |             |           |
| 44     | RDR-STD-2022-03<br>Capacity Building for Preservative Efficacy Test (PET)<br>for Cosmetics   | 1-Jan-2022              | 30-Sep-2023                | 31-Dec-2023 |           |
| 45     | RDR-STD-2023-01 Development and Validation of Ion Chromatographic Method for the Determination of Water-Soluble Anions in Concrete and Related Materials                                     | 1-Jan-2023              | 31-Dec-2023                |             |           |
| 46     | RDR-STD-2023-02 Program: Enhancement of ITDI-STD Fuel Testing Services Phase 2: Development of Charcoal In-house Quality Control Material for Proximate and Ultimate Analysis in Solid Fuels | 1-Jan-2023              | 31-Dec-2023                |             |           |
| 47     | RDA-STD-2019-01<br>Upgrading of ITDI-Laboratory Animal Facilities in<br>Support for Tuklas Lunas and Other DOST Programs,<br>and Industry Needs  | 4-Nov-2019              | 3-Nov-2021                 | May 3, 2023 |           |
| 48     | RDA-STD-2022-01<br>Establishment of Halal Assurance Management System<br>and Halal-Compliant Standardized Process for Spa<br>Skincare Products for the Halal Tourism Industry                | 1-Jan-2022              | 30-Jun-2023                | 31-Oct-2023 |           |
|        |  | NATIONAL METR           | OLOGY DIVISION             |             |           |
| 49     | RDR-NMD-2022-01 Development of Real-Time Data Acquisition Program for High Accuracy Machine Indicators using Artificial Neural Network   | 1-Jan-2022              | 31-Dec-2022                | 30-Sep-2023 | Completed |
| 50     | RDR-NMD-2023-01<br>Upgrading High-capacity Manual Mass Comparators<br>through Development of an Automated Rotary Multi-<br>Position Weighing System  | 1-Jan-2023              | 31-Dec-2023                |             | Completed |
|        | Enhancement of the Competence and Capabilities of the  | National Metrology Labo | oratory of the Philippines |             |           |
| 51     | RDRD-2017-NMD-01 Project 1 : Chemical Metrology for Organic Contaminants in Food and Water   | 1-Jan-2017              | 31-Dec-2023                |             | Completed |
| 52     | RDRD-2017-NMD-02<br>Project 2 : Chemical Metrology for Inorganic Toxic<br>Elements in Food and Water   | 1-Jan-2017              | 31-Dec-2023                |             | Completed |
| 53     | RDRD-2017-NMD-03<br>Project 3 : Biological Metrology for Microorganisms in<br>Food   | 1-Jan-2017              | 30-Nov-2023                |             | Completed |
| 54     | RDRD-2017-NMD-04<br>Project 4: Strengthening the Physical Metrology<br>Capabilities of the National Metrology Laboratory (NML)   | 1-Jan-2017              | 30-Jun-2022                |             | Completed |