

## Takatsuji, APMP award 2019 DEN to PH Ebarvia, first Pinay awardee



**Dr. Benilda S. Ebarvia, Assistant Scientist and head of the Metrology in Chemistry (MiC) Laboratory of the National Metrology Laboratory (NML-ITDI) is the first winner for the Philippines. She bested others from Bangladesh, Cambodia, China, North Korea, Pakistan, Zimbabwe, Fiji, India, Indonesia, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vietnam.**

Photo Credit: RRUdelaCruz

Dr. Toshiyuki Takatsuji, of the National Metrology Institute (NMI) of Japan and chair of the Asia Pacific Metrology Programme (APMP), awarded the 2019 Developing Economies NMI (DEN) Award to Dr. Benilda S. Ebarvia, Assistant Scientist and head of the Metrology in Chemistry (MiC) Laboratory of the National Metrology Laboratory (NML-ITDI) in rites at Le Montage in Sydney, Australia on December 4, 2019.

Dr. Ebarvia is the first winner for the Philippines. She bested others from Bangladesh, Cambodia, China, North Korea, Pakistan, Zimbabwe, Fiji, India, Indonesia, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vietnam.

Dr. Beng, as she is called, received the award for having played a key role in establishing the Metrology in Chemistry (MiC) at NML-ITDI and raising funds for its operations, including raising awareness of metrology among stakeholders in the country.

However, she is best represented by her work on developing the first Certified Reference Materials or CRMs in the Philippines (please refer to full report on the same, p.7). CRMs, which are used by measurement laboratories, are means to confirm methods and to assess accuracy of measurement results, for example, content of properties in foodstuffs, e.g., aflatoxin M1 in milk powder, and aflatoxins B and G in peanut butter products, among others.

▶ 3

## Mapagpunyaging ika-118 anibersaryo ng ITDI idinaos

Naging matagumpay at puno ng saya ang nagdaang pagdiriwang ng ika-118 taon nang pagkakatatag ng ITDI na ginanap noong ika-isa ng Hulyo 2019 sa Rizal Hall ng Philippine International Convention Center (PICC) na may temang "ITDI: Ika-118 Taong Pagpapalaganap ng Kulturang Agham, Teknolohiya at Inobasyon Tungo sa Pag-unlad ng Kasarian".

Bilang pagbubukas ng araw, nagdaos si Fr. Dante Lumabas, SSP ng banal na misa para sa pagdiriwang. Bilang pagbati, sinabi niya na, "Thank you are such magic words, and these should be our refrain every day. Not only because we have lasted for 118 years, but as I said every day, it is because we receive so much."

Ang pagdiriwang ay pinangunahan ng Kalihim ng DOST Fortunato T. de la Peña na siya ring nagbigay ng pangunahing tala. Sinabi niya na,



▶ 3



## NML-ITDI hosts 2019 APMP Mid-Year Meetings



Some 21 member economies attended the mid-year meetings representing the Executive Committee (EC), Technical Committees (TC), Focus Groups, and the Developing Economies Committee (DEC). APMP Chair Dr. Toshiyuki Takatsuji of NMI-Japan (first row, third from left) is flanked by TC Chair Dr. Chu-Shik Kang of the Korea Research Institute of Standards and Science, and EC member Dr. Osman Zakaria of NMI-Malaysia (first row, first and second from left). TCTF Prof. Zhang Aimin of NMI-China and TCL Dr. Jariya Buajarern of NMI-Thailand (first row, second and first from right, respectively) joined also the group.

Photo Credit: JAGTrillana

The National Metrology Laboratory (NML-ITDI) successfully held the 2019 Asia Pacific Metrology Programme (APMP) Mid-Year Meetings on June 17 to 22 in Mactan Island, Cebu.

APMP, a group of National Metrology Institutes (NMIs) from the Asia-Pacific region, engages in enhancement of metrological capability of members through sharing of expertise and exchange of technical services. (NML represents the Philippines as a full member of APMP. The APMP Mid-Year Meetings are held annually to follow up on matters arising from its General Assembly.)

Some 21 member economies attended the meetings representing the Executive Committee (EC), Technical Committees (TC), Focus Groups, and the Developing Economies Committee (DEC). There are currently 44 full member laboratories from 28 countries. These include Australia, Bangladesh, Brunei Darussalam, Cambodia, China, Chinese Taipei, Democratic People's Republic of Korea, Fiji, Hong Kong, India, Indonesia, Japan, Republic of Korea, Macao, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Papua New Guinea, the Philippines, Russia, Singapore, Sri Lanka, Thailand, and Vietnam.



DD Diana L. Ignacio (first row, second from left) led the NMI-Philippines delegation in the concluded 2019 APMP Mid-Year Meetings held on June 17 to 22 in Mactan Island, Cebu.

Photo Credit: JAGTrillana

NML is represented in the series of meetings and workshops held in the first four days by Dr. Diana L. Ignacio, ITDI Deputy Director for ATS; Aurora Kimura, NML Chief; and Engr. Manuel M. Ruiz, Supervising SRS.

Meanwhile, the International Symposium on Metrology in Clean Water, and NMI-Stakeholder Engagement Workshop and Focus Group Meeting were held in the last two days. Several foreign and local participants from water testing laboratories, water regulatory bodies, academic institutions, and water providers attended the symposium.

The week-long activities were preceded by APMP Chair Dr. Toshiyuki Takatsuji of NMI-Japan and were attended by DOST Secretary Fortunato T. dela Pena, DOST Undersecretary for Regional Operations Brenda L. Nazareth-Manzano, and ITDI Director Annabelle V. Briones,

NML-ITDI, DOST VII, and the APMP Secretariat organized the 2019 APMP Mid-Year Meetings with support from the DOST-Central Office and DOST-PCIEERD. (MISalazar// JAGTrillana\ \ NML-ICOW)



# DOST holds first PAM Day

Some 300 partners from the industry, academe, and the regions talked about the future of additive manufacturing in the country through the recently concluded Philippine Additive Manufacturing Day held on September 24-25, 2019 held under the auspices of the Industrial Technology Development Institute (DOST-ITDI) and the Metals Industry Research and Development Center (DOST-MIRDC).



Additive manufacturing employs rapid production of materials which help increase efficiency and reduce costs of traditional fabrication. With the soon-to-rise Additive Manufacturing Center (AMCen) in the Philippines, ITDI and MIRDC enjoin collaborators to strengthen the additive manufacturing industry as a response to Industrial Revolution 4.0.

The two-day event consisted of an overview of the fabrication industry in the country, as well as the services to be offered by AMCen once it becomes operational by 2020. Signing of the AMCen PartnerShape Memorandum of Agreement (MoA) with collaborators and partners also took place.

Lectures on 3D printing, design, opportunities, and the limitless uses of additive manufacturing for innovation were also featured. To increase awareness and appreciation of additive manufacturing, an exhibition showcasing company partners was held as well.

*Photo Credit: RRUdelaCruz*



DOST's AMCen envisions to provide a shared facility for advanced additive manufacturing technologies among its stakeholders through two projects, namely, Development of Multiple Materials Platform for Additive Manufacturing (MATDEV), and Research on Advanced Prototyping for Product Innovation and Development using Additive Manufacturing Technologies (RAPPID-ADMATEC).

Further, It aims to explore use of new materials from local sources, while innovating on products through rapid prototyping.

This joint venture between ITDI and MIRDC is a bold step to intensify competitiveness and boost the local additive manufacturing industry by providing new products and services for the Filipino people. **(MVAtienza \ TSD-ICOW)**

## Takatsuji, APMP... *from p. 1*

These are useful also in proving what makes up a particular food, its micronutrients, or the extent of its authenticity.

Further, Dr. Ebarvia's CRM work supports results of measurement laboratories to ensure that local commodities can pass stringent international trade standards on food quality and control. Thereby,

## Mapagpunyaging... *from p. 1*

*"Maganda ang ginawa ninyong pagkilala sa ating mahalagang partners and collaborators...dahil napakaimportante ng collaboration."*

Dumalo rin si Dr. Carol M. Yorobe, Pangalawang Kalihim para sa Serbisyo ukol sa Agham at Teknolohiya, na siya ring nagbigay ng pambungad na pananalita. Sinabi ni Yorobe na, *"Ang selebrasyon na ito ay isang buhay na saksi sa sigasig at tiyaga ng ITDI na harapin ang hamon at pangangailangan ng industriya at iba pang ahensya."*

detention of products in the export market can be prevented.

APMP established the DEN Award in November 2010. It aims to highlight contributions from and to recognize outstanding achievements of an individual from APMP's 17 member economies in advancing metrology efforts in their country and or within the Asia Pacific Region. It gives the award to only one individual every year with APMP reserving the right to declare no winner within an award year. **(AMGuevarra \ TSD)**

Sumunod ay si Dr. Annabelle V. Briones, Direktor ng ITDI na nagbigay ng isang malugod at masayang pagbati para sa mga kawani ng buong ahensya. Mainit n'yang tinanggap ang lahat ng mga panauhin.

Ikinumpura n'ya ang ITDI sa atomic number na 118 na taglay ng pinakamabigat na elementong oganesson sa periodic table dahil *"Ang ITDI ay bigatin din. Bigatin sa siyensya, teknolohiya, at inobasyon."* Pinasalamatang niya na may galak sa puso ang mga kawani ng ITDI na nagtulongan upang itaguyod ang siyensya at teknolohiya at patuloy na nagsisikap makalikha at gumawa ng mga bagay na kapaki-pakinabang para sa lahat.

# DOST-ITDI to offer Food Processing NC III soon

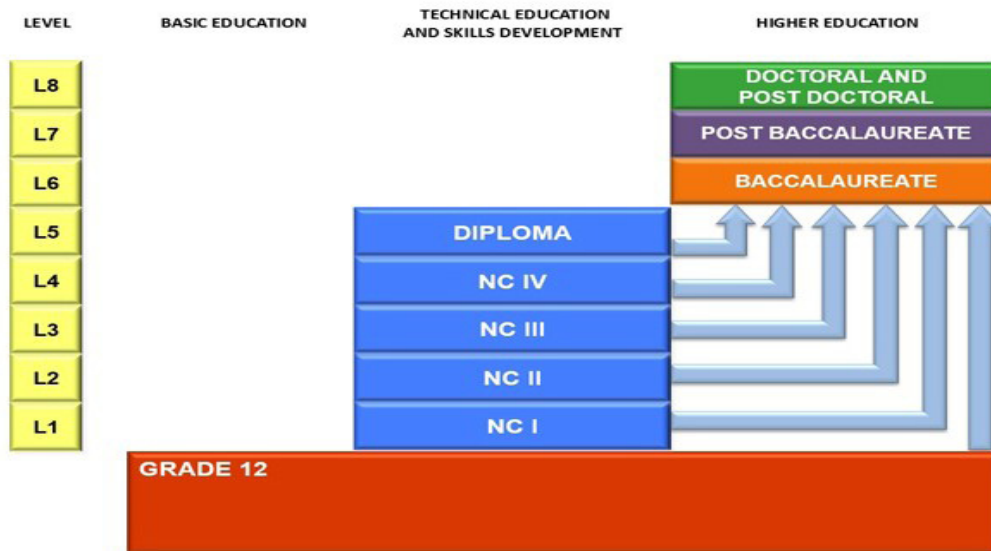
DOST-ITDI through its Technological Services Division's Regional Cooperation and Training Section (TSD-RCTS) is set to parlay a decade-long technology training activity series into a National Certificate III or NC III program.

A first for the Science Department and ITDI, it is working currently with TESDA to assess qualification requirements of operating ITDI's Food Innovation Center (FIC) machines for NC III accreditation by 2020. Recipients at this level passed training coursework and tests that teach required skills, individual autonomy and responsibility for others, including team or group coordination.

Further, this follows the Philippine Qualifications Framework (PQF), which with its eight levels has been formally aligned with the levels of the ASEAN Qualifications Reference Framework (AQRF) during the 6th AQRF Committee Meeting held on May 21-23, 2019 in Luang Prabang, Lao PDR.

as per PQF-NCC Resolution No. 2014-03 adopted on December 11, 2014

## The PHL Qualifications Framework



Source: ASEAN Qualifications Reference Framework Referencing Report of the Philippines, May 2019.

This means the qualification requirement in the country not only meets industry competency standards here, but those of industries in ASEAN Member States as well.

Now, nationally certified workers are qualified to work in Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, and Vietnam.

### Defining NC Terms

A long on-going trend worldwide, certifying skill sets or certificate program is geared, generally, towards adult students and students looking for short-term training leading to immediate employment.

While, other countries provide their program at two main levels, undergraduate and graduate, here in the Philippines, TESDA offers the qualifications program to middle-level skilled workers through its Philippine TVET Competency Assessment and Certification System (PTCACS). PTCACS determines whether a graduate or worker can perform to standards required in the workplace based on defined competencies.

### ITDI Pushes for Food Processing NC III

Certainly, firms powered by nationally certified workers not only meet industry standards for their required skill sets. Certification ensures as well that workers are productive, first-rate, and globally competitive.

Thus, RCTS-TSD, in coordination with other R&D divisions namely, Food Processing Division (FPD) and Chemicals and Energy Division (CED), is working to offer a national certificate program on operation of four machines offered at the FIC. These include water retort, vacuum fryer, spray dryer, and freeze dryer.

While TESDA has listed for 2018 some 1,087 Qualification Titles, it does not offer an NC program on food processing higher than Level II. At this level, certificate recipients passed qualification requirement in conditions where there is substantial supervision and limited judgment is needed.

Further, Food Processing at Level II mainly certifies skill sets, such as salting, curing, and smoking; fermentation and pickling; sugar concentration; drying and dehydration; and thermal application.

With Food Processing NC III, ITDI will be offering a certificate program, which is not only machines-based but that which relies also on advanced food engineering.

In addition, passers of the program will be listed in the Registry of Certified Workers of TESDA, which provides information on certified workers for local and foreign occupations including the USA and the Middle East.

In partnership with TESDA since 2008, ITDI is currently developing a Training Regulation (TR) on the operation of the four FIC machines in preparation for a test run of the training program at the FIC Main in Taguig City.

They initially met with industry stakeholders on May 14, 2019 and conducted a functional analysis workshop on May 29. They followed this up with a workshop on the review of Food Processing NC III on September 2-6. Finally, they plan to conduct a workshop soon to finalize the draft TR in consultation with industries. **(CBCandelaria \ TSD-ICOW; AMGuevarra \ TSD)**



# 'The Future We Want' -- Attaining SDGs thru 2019 NSTW showcase

## ITDI features in three cluster goals

In a strong and loud voice of real support to protection and improvement of human life and environment, DOST carried the baton to build "The Future We Want" through its annual National Science and Technology Week (NSTW) exhibition of its technologies and services held on July 17-21, 2019 at the World Trade Center-Metro Manila, Pasay City.

The tagline, lifted from the 2012 UN Conference on Sustainable Development (RIO+20) held in Rio de Janeiro in Brazil, is still carried on years later as the world aimed to attain the eight Millennium Development Goals (MDGs) by 2015. After the date, the MDGs were expanded to 17 Sustainable Development Goals or SDGs to be attained by 2030 as follows:

1. No Poverty;
2. No Hunger;
3. Good Health and Well-being;
4. Quality Education;
5. Gender Equality;
6. Clean Water and Sanitation;
7. Affordable and Clean Energy;
8. Decent Work and Economic Growth;
9. Industry, Innovation, and Infrastructure;
10. Reducing Inequality;
11. Sustainable Cities and Communities;
12. Responsible Consumption and Production;
13. Climate Action;
14. Life Below Water;
15. Life On Land;
16. Peace, Justice, and Strong Institutions; and
17. Partnerships for the Goals

Albeit tough and longer, the SDG list is slowly being whittled down as the Department and its 20 line agencies launched the five-day exhibition.

Themed as "*Science for the People: Enabling Technologies for Sustainable Development*," this year's event put on display recently developed technologies and products. These are results of intensive and exhaustive research and development (R&D) efforts of DOST's Research and Development Institutes such as the Industrial Technology and Development Institute or ITDI.

Designed to enhance quality of all life forms and safeguard the environment that supports it, these technologies and products tackle ways to attain the SDGs and its thematic concerns on water, energy, climate, oceans, urbanization, transport, and science and technology.



Photo Credit: RRUdelaCruz

DOST hence transformed the 11,300 m<sup>2</sup> of adjoining indoor exhibition space of the WTCMM into eight exhibition clusters, with each cluster showing technologies, learning resources, and services that support several SDGs.

Two exhibition clusters flanked each side of the stage and performing area, namely, the Resilience and Innovation cluster on its left side which focused on SDG Nos. 9, 11, and 13, and the International Linkages cluster on the other side - SDG Nos. 10 and 17.

At ITDI, 21 of its technologies and products were featured in three exhibit clusters, namely, Cluster 1 - Food Security, Energy, and Environment; Cluster 2 - Aging Society, Health, and Medical Care; and Cluster 7 - Resilience and Innovation.

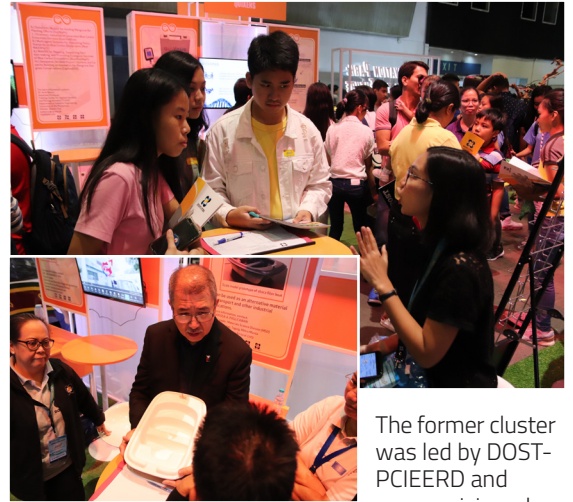


Photo Credit: RRUdelaCruz

The former cluster was led by DOST-PCIEERD and was envisioned to be a futuristic

park that was filled with eye-catching displays on affordable and clean energy, as well as, innovative, sustainable, and resilient infrastructure and devices. Here, ITDI listed nano-composite geomembrane for environmental application, solar biomass for heat application, biomass-fired steam kettle equipment design for coconut water processing, abaca fiber-reinforced composite for boats, and energy audit survey and analysis for energy conservation in buildings.

On the other hand, the health cluster exhibit was represented in the shape of a human body that highlighted technologies, services, and studies that emphasized how these interventions have helped enhance and extend quality of life of Filipinos, especially aging individuals.

Here, ITDI showcased hard carrageenan capsule from red seaweeds, high dietary fiber from calamansi waste, MOSYMU natural anti-diabetic health supplement, slimming cream in a fat-burner cream, natural-based analgesic balm, cassava resistant starch for dietary application, natural mosquito repellent lotion against dengue fever, food-related chemical and biological metrology, and emergency food reserve.

Finally, the last cluster highlighted how the services and projects of ITDI and other agencies contribute to safer and resilient communities. Featured here were ITDI's ready-to-eat (RTE) *arroz caldo*, RTE cassava in syrup, RTE sweet potato, RTE smoked fish meal, collapsible toilet bowl for emergency/ disaster operations, emergency food reserve, and emergency disinfection system.

Currently, more and more people regard the NSTW as venue for science buffs, technology generators and investors, S&T service providers, and public to come together and pursue mutually beneficial opportunities in technology commercialization and linkages. This year it offered green, socially responsible, and sustainable technologies as well as services that are reactive to real needs of a greater number of Filipinos.

NSTW is celebrated every third week of July through Proclamation No. 169 of 1993 to highlight significant contributions of S&T to national development. Next year however, November is the month to watch for the NSTW celebration as per directive from the Office of the President. **(AMGuevarra\ TSD)**

# ITDI to boost terra cotta production in Antique Province

Improved terra cotta production specifically bricks, will soon commence in Antique as efforts to revive this trade went full gear in the second half of the year.

This is being realized through an initiative by the Office of Rep. Loren Regina B. Legarda of the Lone District of Antique who is also the Deputy Speaker of the House. The Php20M project intends to provide technical and technological assistance for upgrading community-based terra cotta production facilities in the municipalities of Tibiao and Sibalom in Antique. DOST-ITDI was tapped to implement the project.

*Photo Credit: RACllarde*



Primarily, the technical assistance focuses on introduction of appropriate ceramic production techniques, acquisition and use of modern equipment, and installation of production facilities suitable to the needs of beneficiaries and other existing terra cotta producers in the area. The project aims to promote quality brick production and achieve high productivity among producers in the province.

The project started rolling in August when a team from DOST-ITDI led by TSD Chief Nelia C. Florendo met with terra cotta producers in Tibiao and Sibalom. Together with their counterparts in DOST Region VI led by Asst Regional Director Fabila, the team conducted onsite inspection in August and September to assess needs of the



processors/beneficiaries, and identify ways how to upgrade their current facility and processes. They explored also, the possibility of installing new equipment and providing new skills through an advance course on brick and pottery making. As well, a series of consultative meetings with the various stakeholders to plan out implementation were conducted.

Thus, on October 14, 2019, a ceremonial signing of agreement among the stakeholders led by DOST-ITDI was held at the University of Antique (UA). Participants included heads and representatives of DOST VI, DTI VI, DENR VI, LGU of Sibalom, and local potters association in Manugkoron.

This was followed by a six-day skills training for some 32 members of two cooperatives and other local pottery producers from Sibalom, Tibiao, and Bari. A total of 28 moulds were produced and used to generate 70 green wares ready for firing in the second part of the training in December.

Hopefully with this interventions which are all based on previous DOST-ITDI R&D (research and development), livelihood for the people of Antique can be generated and, possibly, rebound to improved lives of terra cotta producers and surrounding communities as well. ***(with reports from NAGanotisi, RACllarde \ TSD)***

## ITDI Chief leads revival of IAC

DOST-ITDI revived the Industry Advisory Committee through an introductory meeting where ExeCom Members led by ITDI Director Annabelle V. Briones met with industry representatives from both public and private sectors last July 30, 2019 in Makati City. This move aimed to ensure that the Institute's efforts are directed towards enhancing local industry competitiveness. It was facilitated by ITDI's Planning and Management Information Systems Division led by its Chief, Dr. Zorayda V. Ang.

Present during the introductory meeting were executives from the Philippine Plastics Industry Association, Inc.; Commodity Quest; Nestle Philippines; Dow Chemical Pacific Limited, San Miguel Yamamura Packaging Corporation, UniLab Inc.; and Department of Trade and Industry. ***(MLMYSulat \ PMISD-ICOM)***



## Mapagpunyaging... *from p. 3*

Samantala, ang panauhing pangdangal sa okasyon na si Gng. Sandra S. Montano ay isang aktibong taga pagpalaganap ng teknolohiya at gawaing pang agham ng ITDI-DOST at kasalukuyang Commisioner ng Philippine Women's Commission. Sa kanyang pananalita, nabanggit niya ang mga proyekto at adhikain ng kanyang grupo, kabilang na ang paggawa ng mga produktong handa ng kainin sa oras ng kalamidad (tulad ng bagyo, lindol, at baha). Ang mga pagkaing ito ay hindi na kailangan ng preparasyon at pagluluto at madaling dalhin sa mga lugar na apektado ng kalamidad. Kaugnay nito, sinabi

niya na kaya isinusulong niya ang mga gawaing ito ay sapagkat isa siya sa naging biktima nang malakas na lindol sa Baguio noong taong 1990.

Sinabi din niya sa wikang Inggles, *"Thank you ITDI for completing my goal in life, for helping me do something socially significant in the community."*

Matapos ang mga talumpati, nagtagisan ng galing ang mga kawani sa isang pangkulturang pagtatanghal kung saan ang bawat pangkat ay nagpamalas ng kanilang talento sa pagsasayaw o pagsasadula ng iba't ibang kultura ng Pilipinas sa Luzon, Bisayas, at Mindanao.



# Keeping Philippine foods, waters safe thru referencing

The food world has discovered the key to stopping and preventing massive product recalls. Some quarters, however, met the news with both skepticism and excitement. Far from the usual fanfare and fireworks, as well as massive media hype, there is, however, something quiet and reassuring about this new tool we call reference materials (RMs).

So what are reference materials? RMs and the process of referencing are means to confirm methods and to assess accuracy of measurement results.

Generally, these materials provide measurement laboratories a range of matrix combinations to analyze, say, content of properties in foodstuffs, i.e., aflatoxin M1 in milk powder, and aflatoxins B and G in peanut butter products, among others.

However, RMs are not only useful in proving what makes up a particular food, its micronutrients, or the extent of its authenticity. What makes it valuable is how it supports results of measurement laboratories to ensure that commodities can pass stringent international trade standards on food quality and control.

This is because product recalls pose significant economic burdens. When these recalls are traced, for example, to high histamine levels (a chemical indication of food spoilage) in canned tuna fish, a public health scare can lead to epidemiological tracking of determinants of the disease conditions.

Now, this is not only scary, it is also time consuming, expensive, and damaging to the canned tuna manufacturer. When the scare happens overseas to a Philippine product, it does not only mean refused entry. It can also put the country name in the barred list of exporters of unsafe products.

Currently, most Philippine food manufacturers rely on RMs purchased overseas like the US, UK, Japan, China, and Thailand. RMs are fairly pricey; one material per food product may cost from Php15,000 to Php30,000. Further, these are updated continually.

## First RMs in PH

While use of highly characterized, authenticated control materials, such as RMs, is vital in food testing, the Philippines took time to develop these.

Dr. Benilda S. Ebarvia, Assistant Scientist and head of the Metrology in Chemistry (MiC) Laboratory of the National Metrology Laboratory at the Industrial Technology Development Institute (NML-ITDI) explains why.

*"Referencing is time consuming, requiring skills that need to be learned and honed through the years. Their [RMs] development has to be matched with appropriate, state of the art – that means very expensive -- equipment. Staff who will be using the equipment and devices have to be trained on how to use, maintain, and trouble-shoot the same."*

Unfazed by the scope and breadth of work that remains, Dr. Ebarvia proposed repair of a standing facility at NML, which would serve as site for development of RMs.

Last year on January 17, work began on the metrology in chemistry service facilities, located to the left of the NML building, which is in Bicutan, Taguig City. It will soon house the 1,900-m<sup>2</sup> MiC Laboratory.

On the other hand, the 1,600-m<sup>2</sup> Metrology in Biology (MiB) Laboratory will be fixed on the right side of NML. Marlon Aguinaldo, Senior Science Research Specialist at the Standards and Testing Division (STD-ITDI), heads the MiB Laboratory.

Both are three-floor structures where activities such as reference materials production, reference materials storage, and analysis will be carried out.

The Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) is monitoring upgrading of the facilities under the five-year program *"Enhancement of the Competence and Capabilities of the National Metrology Laboratory of the Philippines."*

The program consists of four projects, which include chemical metrology for organic contaminants in food and water, chemical metrology for inorganic toxic elements in food and water, biological



**ITDI has developed reference materials on benzoic acid (a preservative) in mango juice, benzoic acid in banana catsup, and soon pesticides in fresh mango, and other fruits and vegetables.**

metrology for microorganisms in food, and strengthening the physical metrology capabilities of NML.

Dr. Ebarvia claimed, *"We are working to get there. It may take a long time still, but we will surely get there. In fact, we aim to develop, soon, the country's own Certified Reference Materials."*

Indefatigable, she began actual referencing work on water and food in 2013 and completed RMs on presence of trace heavy metals in water, such as lead, cadmium, copper, iron, manganese, nickel, zinc, cobalt, and magnesium. As well, an RM on calcium (a reactive metal) in water was developed. These metals are toxic and noted for their potential toxicity in the environment.

RMs in food include benzoic acid (a preservative) in mango juice and histamine in canned tuna.

When the project began in 2017, her team completed another set of RMs on trace presence of toxic metals in drinking water (manganese, nickel, cobalt, and iron), benzoic acid in banana catsup, sulfite as preservative in dried mango, and histamine in dried *salinas* fish.

With repair work on the facilities targeted to be completed this year, Ebarvia's team is complementing this with plans to complete until 2021 development of 15 RMs on pesticides in fresh mango, and other fruits and vegetables; and presence of veterinary drug residues such as salbutamol in pork meat; and 3-Amino-5-morpholinomethyl-2-oxazolidone or AMOZ in fish, among others. **(AMGuevarra\ \ TSD)**

# Mapagpunyaging... *from p. 6*

Ang kampion sa tagisang ito ay ang pangkat Luzon na binubuo ng dibisyon ng FAD, FPD, at NML. Samantala, tumanggap ng ambos o consolation prizes ang mga pangkat ng Bisayas (binubuo ng PTB,

CED, MSD, at ADMATEL), at Mindanao (binubuo ng OD, ODD, EBD, at STD).

Pagkatapos nito ay ang pagbibigay ng parangal sa mga huwarang empleyado ng ITDI para sa taong 2018. Tumanggap ng parangal bilang Huwarang mga Kawani ng 2018 (Model Employee for 2018) sa ilalim ng kateryang Technical at Support ang mga sumusunod:

## Pangkalahatan (Overall) - SENIOR Staff

Prima Joy Margarito (EBD) - Technical  
Kiveen Suycano (NMD) - Support

## Pangkalahatan (Overall) - JUNIOR Staff

Jhonny Tenorio (MSD) - Technical  
Ma. Waidelyza Balderama (FMD) - Support

## Dibisyunal na modelong kawani (divisional model employees):

### Senior-Technical:

Charito Villaluz (FPD)  
Ermin Orendain (PTD)

### Junior-Technical:

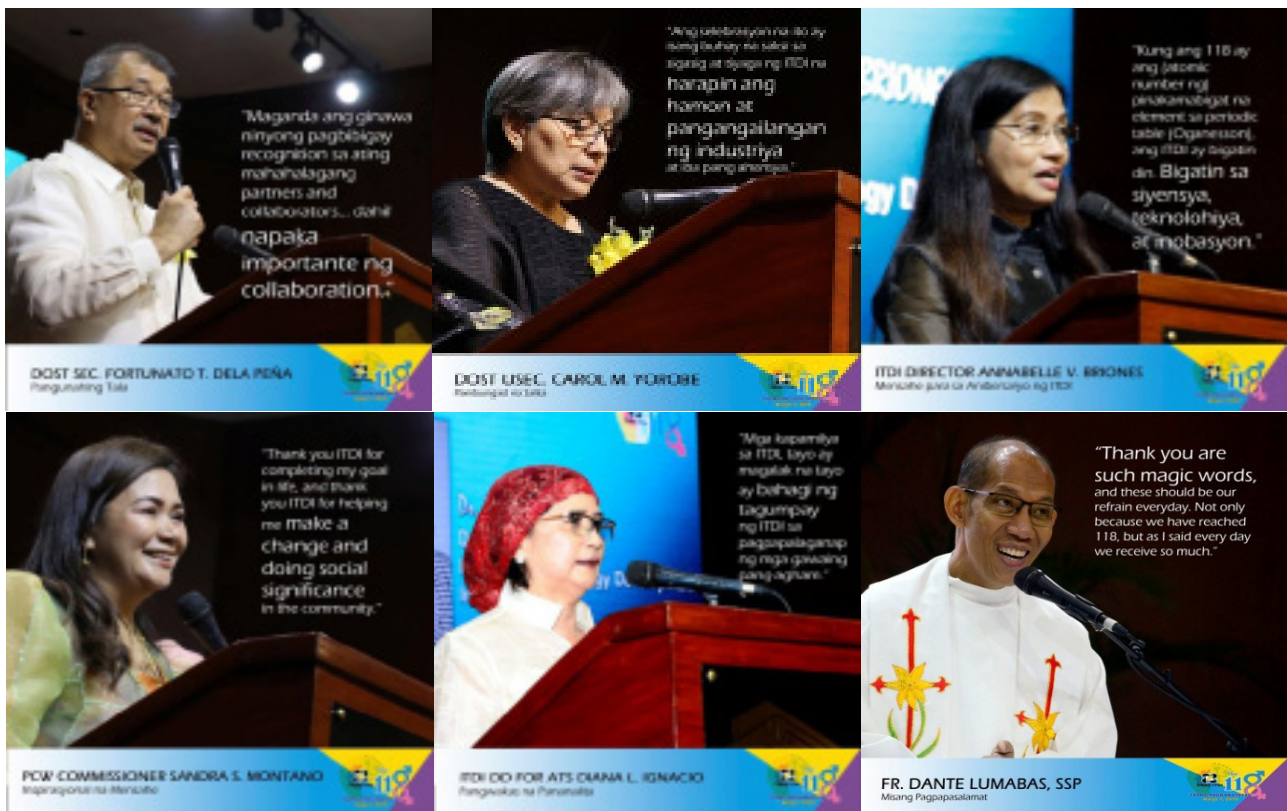
Raymundo Adan (EBD)  
Oscar Magora (FPD)  
Allan Quirante (PTD)

### Senior-Support:

Merlita Regonda (ADM)  
Patricia Ashley Mendoza (FMD)  
Jose Mari Manalo (PMISD)  
Cynthia Ochona (STD)  
Theresa Chan-See (TSD)

### Junior-Support:

Sharra Abache (ADM)  
Cedric Crucero (NMD)  
Virgina Marino (PMISD)  
Liza Lagpao (STD)  
Cecilia Kuinisala (TSD)



Bilang dagdag kasiyahan ay umawit nang pasalit-salit ang ITDI Chorale na nilubos naman nang pagkakaroon ng raffle draw ng mga papremyo para sa mga kawani.

Sa pagtatapos ng okasyon nagbigay ng huling mensahe o pananalita si Dr. Diana L. Ignacio, Pangalawang Direktor ng ITDI para sa gawaing

Administrasyon at Serbisyong Teknikal. Sa kanyang mensahe sinabi niya na, "Mga kapamilya sa ITDI, tayo ay magalak na bahagi tayo ng tagumpay ng ITDI sa pagpapalaganap ng mga gawaing pang-aham." Pinasalamatan din niya ang lahat ng mga panauhin at kaagapay mula sa industriya, mga opisyal ng DOST at ITD, at mga kawani nito na nakiisa sa selebrasyon. **(DDGotis\ \ TSD-ICOW)**

## Our Business Is Industry



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The official Newsletter of the  
Industrial Technology Development Institute, DOST  
(Published semi-annually)

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