“The current situation and challenges concerning the development of research environments for advanced research equipment between ASEAN countries and Japan”

Advanced Device and Materials Testing Laboratory (ADMATEL) – Philippines’ DOST Intervention to Industry Competitiveness and Emerging R&D Initiatives and Collaborations

DISCUSSANT :

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DOST- ITDI , Metro Manila, PHILIPPINES

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JST Japan Science and Technology Agency

MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

Asia and Pacific Research Center

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ADMATEL is DOST's national testing facility equipped with advanced analytical instruments for failure analysis and materials characterization

OUR MISSION

TO PROVIDE THE HIGHEST QUALITY, ACCURACY, AND PRECISION TEST SERVICES IN FAILURE ANALYSIS AND MATERIALS CHARACTERIZATION, CONTRIBUTING TO THE ADVANCEMENT OF SCIENCE AND TECHNOLOGY IN THE COUNTRY.

OUR VISION

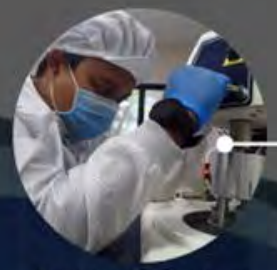
- ENHANCE RELEVANT VISIBILITY LOCALLY AND REGIONALLY
- PROVIDE FAST AND ACCURATE ANALYSIS
- ACTIVELY SUPPORT EMERGING INDUSTRIES AND SMES
- BECOME A CENTER OF EXCELLENCE IN MATERIALS TESTING

OUR FACILITIES & EQUIPMENT

ADMATEL has a total floor area of 2,880 sq. m. which houses a 100K cleanroom laboratory, namely:

1. Surface Analysis Laboratory,
2. Thermal Analysis Laboratory, and
3. Chemical and Metallurgical Laboratory

All our laboratories follow the industry-standard requirements for cleanroom temperature, humidity, and ESD safety compliance.



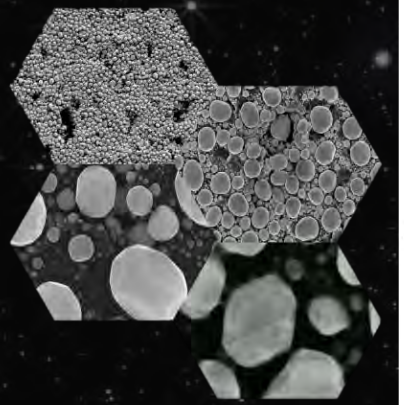
Premier Equipment

ISO Accredited Lab

100K cleanroom

Accessible Location

ADMATEL Premier Equipment



FIB-Field Emission SEM-EDX

3D Computed Tomography X-Ray

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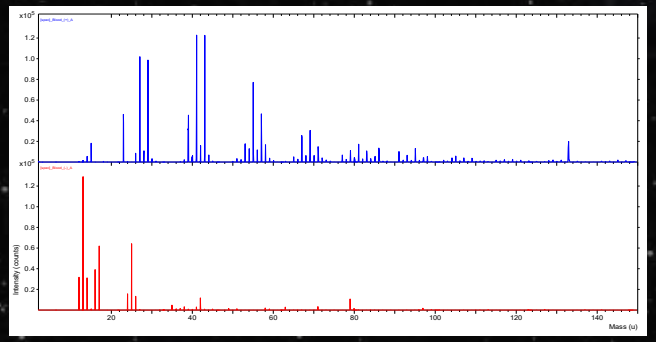
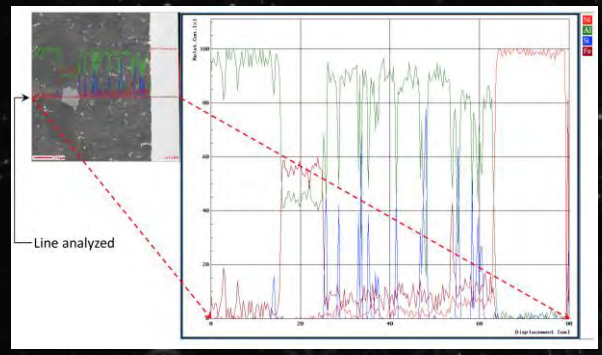
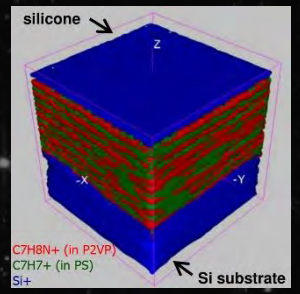
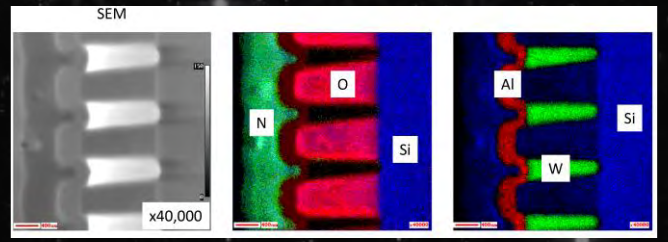
TOF-Secondary-Ion Mass Spectroscopy



Auger Electron Spectroscopy







OUTCOMES

- PRESENCE OF LOCAL CAPABILITIES FOR SPECIALIZED SERVICES
- ATTRACTING POTENTIAL INVESTORS
- REINFORCED R&D INFRASTRUCTURE IN THE PHILIPPINES
- EMPOWERED THE ACADEMIC COMMUNITY
- INCREASED CONFIDENCE LEVEL OF THE INDUSTRY TO LOCAL SERVICES
- PROMOTED INDUSTRY-GOVERNMENT COLLABORATION
- SERVED DIFFERENT INDUSTRIES AND CLIENTS FROM LUZON, VISAYAS AND MINDANAO
- SAVED TIME AND COST FOR MANUFACTURING COMPANIES SINCE TESTING SERVICES ARE MADE AVAILABLE LOCALLY INSTEAD OF SENDING OUT THEIR SAMPLES ABROAD
- CAPACITATED AND EMPOWERED THE RESEARCH COMMUNITY (ACADEME, RESEARCH INSTITUTIONS AND SMES) THROUGH SPECIALIZED ANALYSIS OF EMERGING MATERIALS (NANOMATERIAL, COMPOSITE, THIN FILM, ETC.)
- ENABLED DESIGN AND PRODUCT DEVELOPMENT TOWARDS INCREASING EFFICIENCY AND PRODUCTIVITY

Laboratory of Excellence

Advanced Device and Materials Testing Laboratory (PL-51)

This laboratory has been recognized by the DOST-ITDI Interlaboratory Comparison Team as a Laboratory of Excellence for achieving 100% acceptable data in the

December 2019 Nanomaterial Size Measurement Interlaboratory Comparison with Code ITDI-MSD-IL01

which was participated by various testing laboratories in the Philippines.
This achievement is a demonstration of the superior quality of this laboratory in nanomaterial size measurement in the following nominal size listed below.

Certified Mean Diameter	Instrument Used	Participant Lab's z-score
91 ± 4 nm	Scanning Electron Microscopy (SEM)	0.15

ADMER REY C. DABLIO, RCh
Head, Interlaboratory Comparison
STD-ITDI, DOST

BLESSIE A. BASILIA, PhD
Chief Science Research Specialist
MSD-ITDI, DOST

Department of Science and Technology
Republic of the Philippines

NANOSAFETY IN THE PHILIPPINES

Competence **Education** Research Data **Standards** Risk Assessment / Management

ASEAN – SCMST

Association of Southeast Asian Nations
Sub-committee on Materials Science and Technology

Training on Advanced Materials Characterization Techniques for Young Researchers from ASEAN Member Countries

October 26-28, 2022 || Philippines
Zoom Link: https://zoom.us/j/96507563472?pwd=TUpabIZYdXlyYU9zMWJwLy9udG83UT09
Meeting ID: 965 0756 3472 ; Password: 762799

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- Emerging Research Areas/ Fields are becoming more complex and challenging which demand for advanced research equipment (analytical) and Infrastructure. Acquiring such kind of equipment and facilities are New testing/research facilities equipped with advanced analytical tools are now capable of undertaking R&D on emerging technologies such as Nanotechnology, Additive Manufacturing, Materials Informatics, etc. staying relevant to the challenging needs of their industries.

- However, it has been quite seldom or likely no current research collaborative endeavor or network between ASEAN countries and Japan.

- Collaboration and Harmonization of Technical Capabilities and R&D collaborative efforts not being maintained and sustained. Follow thru activities may be considered to strengthen the collaborative efforts toward achieving research outputs beneficial to each country in efforts to provide

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- Advantages of functionalities and features of current available advanced research equipment such as AES, TOFSIMS, are not fully explored for R&D between and among ASEAN countries and Japan.
- High maintenance cost for Research Equipment since most of the premier analytical equipment were imported from US, Germany, Netherlands, etc.
- Long Downtime of (imported) state of the art Equipment adversely affect the output and outcome of research studies/engagements.

Thank You!

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