

# Additive Manufacturing Makes Waves in the Science Fair Held in General Santos City

By Zalda R. Gayahan

'3d printing is not here to replace conventional manufacturing processes.... It is here to complement,' says Engr. Jose Bernardo L. Padaca III in his presentation for the Advanced Manufacturing Center (AMCen) during S&T Summit, held on October 12, 2022, as one of the highlights of the 2022 Regional Science and Technology Week celebration of the DOST XII (SOCCSKSARGEN).



*Engr. Jose Bernardo L. Padaca III talks about the Advanced Manufacturing Center (AMCen) at the S&T Summit held during the 2022 Regional Science and Technology Week celebration of the Department of Science and Technology – Region XII,*

After two years of holding S&T activities online due to the effects of Covid-19, the 2022 RSTW of DOST XII is back and the entire DOST system is taking the opportunity to bring technologies and services face-to-face to as many stakeholders as possible, especially those in the regions.



Visitors of the DOST-MIRDC booth inquire about the technologies and services offered, specially of the agency's newest facility, the Advanced Manufacturing Center (AMCen).

AMCen, as presented by Engr. Padaca, is the premier hub that develops next-generation manufacturing engineers. It is posed to be the country's leading research center in the field of 3D printing, focused on enhancing capabilities in design, materials development from local sources, and testing and prototyping of products for additive manufacturing. As such, AMCen is fostering collaborative relationships among the government, industry, and academe.

Engr. Padaca presented the seven components of AMCen's services.



With all these capabilities of AMCen, it has already implemented several research and development projects in partnership with the industry, academe, and other government agencies. Engr. Padaca cited as examples the following R&D projects: (1) development of a

prototype casing for a transponder used for monitoring tuna catch and tracing fishing vessels; (2) development of a prototype improvised explosive device (IED) disruptor which disarms explosive devices, in effect hindering attempts of terrorists; (3) development of a prototype filter column for radiation-grafted absorbents for wastewater, which mitigates heavy metal contamination; (4) development of a lightweight observer Bluetooth emitter (LOBE) and embedded acoustic recognition sensor (EARS), both intended for devices for predictive maintenance; (5) development of a manufacturing strategy using 3D-printed parts to create patterns used in sand casting for the production of components for a local electric kick scooter; and (6) investigation into the suitability of acrylonitrile styrene acrylate (ASA) as a material for 3d-printed statue, which allowed the AMCen team to create the very first ever, and the tallest, monument of Dr. Jose P. Rizal, which now stands at the DOST Compound in Gen. Santos Ave., Bicutan, Taguig City.



*'Dr. Jose P. Rizal: The Filipino Scientist' is the first and tallest 3d printed statue of the Philippine national hero. The 12.5-foot statue is made from acrylonitrile styrene acrylate (ASA), one of the research and development initiatives of the AMCen, under the DOST-Metals Industry Research and Development Center.*

Engr. Padaca made the talk even more interesting by enumerating the exciting applications of 3d printing, such as in hybrid manufacturing, architecture and transport, aerospace, automotive, and medical applications.

One might wonder where the AMCen is headed with all these capabilities and offerings. In his talk, Engr. Padaca revealed AMCen's plans for the coming years. AMCen will focus on four key areas – manufacturing, medical, construction, and consumer goods.

In closing, Engr. Padaca informed the audience that AMCen will continue to engage in R&D to come up with solutions to the nation's pressing concerns. AMCen, in the pursuit of its goal of being a national center of excellence for additive manufacturing, will proactively advocate the integration of AM technologies in the academe and the industry. Engr. Padaca stressed that AMCen will make its services available to everyone so that the advancement of Filipinos' skills in additive manufacturing will greatly contribute to the country's growth in the area of science, technology, and innovation.