



DOST-ITDI sets MATDEV forum

The Industrial Technology Development Institute (DOST-ITDI) is gathering industry, academe, government, and non-profit organizations in a stakeholders' forum to be held on March 25, 2021, via the Zoom Meeting platform, to present MATDEV Laboratory's current and future activities on additive manufacturing (AM).

AM is the technique being used by the MATDEV Laboratory to produce models and prototypes directly from three-dimensional (3D) computer-aided design (CAD) without using any tools or fixtures. Funded by the DOST Grants-In-Aid Program, MATDEV Laboratory is a project under the Advanced Additive Manufacturing R&D Program.

Inaugurated on December 22, 2020, the MATDEV Laboratory undertakes research and development on materials for use in additive manufactured products to reduce the cost of raw materials by using local resources.

However, AM has been in use since the 1980s with Hideo Kodama of the Nagoya Municipal Industrial Research Institute inventing two AM photopolymer rapid prototyping systems in 1981. Today, the AM process of making a product by adding successive layers of material is now often referred to as 3D printing.

Compared with traditional production methods or subtractive manufacturing, AM requires less hard tooling and assembly and offers greater customization or bespoke manufacturing at shorter time to market.

AM ensures continual availability of spare parts, which is particularly useful in asset-heavy industries such as aerospace, automotive, and medical. In some countries, the use of AM is widespread in machineries like turbines, handling and robotics, lifestyle and sports like jewelry and biking, and custom parts of classic cars.

DOST-ITDI foresees that in the long run, AM can completely change the way products are designed and built, as well as distributed, sold, and serviced. It is thus advocating AM to the industry through the stakeholder's forum.

ITDI Director Dr. Annabelle V. Briones admits that "AM is where we might be soon as the rest of the world catches up on its use, which can edge out the competitiveness of our local businesses. Right now, most of our manufacturing firms are into subtractive manufacturing."

Subtractive manufacturing involves cutting away from a solid block of material. A milling machine cutting/hollowing out a piece of metal or plastic is an example of subtractive manufacturing.

However, most of AM's current users around the globe think that, "As it currently stands, it is unlikely that additive manufacturing will replace subtractive manufacturing any time soon. This is because both sets of processes have a very contrasting set of advantages and disadvantages, meaning that each can play to the strengths of the other's weaknesses."

Director Briones added that, "AM has been steadily growing a following, primarily because of its big market, which researchandmarkets.com reported at \$12 billion in 2020."

Currently, analysts at Global Market Insights, Inc. believe that the overall economic impact created by AM could reach \$100 billion to \$250 billion by 2025, "... if adoption across industries worldwide continues at today's rate." This potential is seen to come from the aerospace and defense, automotive, medical, and consumer goods industries.

Through the forum, DOST-ITDI hopes to inform concerned industries on AM, its value chain, future players, and the business model which may apply to local materials manufacturers.
(AMGuevarra\ TSD)

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