

EGYPT

- **Zewail City of Science and Technology introduces new technologies to curb coronavirus**

Zewail City of Science and Technology said on Friday that its professors and researchers are working to play an active role in reducing the effects of the coronavirus (COVID-19) by taking various approaches, including health research and education. A group of Zewail City's projects have already been accomplished, while other research projects are currently under evaluation. Current projects that have already borne fruit include ventilators, respirator masks, and an artificial intelligence system for identifying coronavirus cases.



There are three prototypes of low-cost ventilators designed using different technologies:

- **Ventilator (first model)**

A prototype has already been designed and manufactured and a more developed model is in the works. The second model is expected to be completed on April 8, 2020, and aims for a cost of LE2,000 to LE3,000 per unit.



- **Venta-Max Ventilator**

The Venta-Max Ventilator is easily assembled using resources and components available in the Egyptian market at a cost of about LE10,000. It is designed to serve the most severe coronavirus cases and can be connected to solar panels for use in places with limited resources such as field hospitals and remote areas.

- **Ventilator (third model)**

A research team in Zewail City is developing a ventilator that can be used for pneumonia patients who have not reached a critical condition. This project is being undertaken in cooperation with the University of Illinois at Urbana-Champaign in the United States and the Egyptian industrial company al-Araby Group. The device is

expected to cost 70 percent less than imported machines, and to operate to the same specifications.



A respirator mask with a reusable exhalation valve

Zewail City researchers initially designed a respirator mask that is equipped with a reusable exhalation valve and made of easily-sterilized medical silicone rubber treated with anti-viral agents. This design also include changeable filters capable of stopping viral activity.

Artificial Intelligence System for identification of coronavirus cases

The Zewail City project aims to provide a testing system that works with artificial intelligence and deep learning to identify cases of coronavirus from X-ray and CT Scan images, to help specialists in the Egyptian medical sector produce an accurate diagnosis.

The research team collected several X-ray images and developed a preliminary system to identify cases of coronavirus with accuracy. After evaluating the system, it will be provided free of charge to the medical sector in Egypt through the research center in Zewail City.

And after adding distinct analytical diagnostic capabilities, the system, which is expected to be completed within a few months, can be marketed globally to help contribute to a boom in the knowledge economy in Egypt.

Edited translation from Al-Masry Al-Youm

Source: <https://egyptindependent.com/zewail-city-of-science-and-technology-introduces-new-technologies-to-curb-coronavirus/>

● Egypt Tech Firm Aids Virus Fight with 3D-Printed Face Shields



The Giza Systems Education Foundation make protective face shield for use by medical professionals treating COVID-19 coronavirus patients | AFP

Cairo-based tech company Giza Systems uses digital printing technology mainly to produce assistive devices for people with disabilities, working in a lab called Project Nitrous. With the arrival of the virus -- the company quickly jumped into action. It designed a face shield that can be printed in plastic, cut out by laser and simply assembled, and started delivering the devices to thousands of doctors -- for free. The firm is now distributing around 2,000 face shields a day to medics nationwide and has partnerships with around 25 public and private hospitals.

Source: <https://english.aawsat.com//home/article/2257436/egypt-tech-firm-aids-virus-fight-3d-printed-face-shields>

● Egypt's IT Agency Mobilizes Resources to Combat COVID-19

The Information Technology Industry Development Agency (ITIDA), the executive IT arm of the Egyptian Ministry of CIT, is detailing its efforts with the tech community in Egypt to support the attempts to tackle the global Coronavirus outbreak.

The agency is mobilizing its available resources to accelerate research and innovation collaboration that could help in mitigating the impacts made by the global pandemic.

Through its ITAC initiative, ITIDA calls for researchers and tech companies to submit their product development proposals for any health-related IT-enabled Product Development Projects (PDPs) in the field of infectious diseases.

It is also participating as a strategic partner in Pandemic TechHack, a virtual hackathon to adopt moonshot ideas that will help tackle the crisis or position Egypt well for the aftermath, with many international and local institutions, research agencies and startups.

Electronics Innovation Complexes that ITIDA runs in partnership with Sudo Techs, were also made accessible to support the endeavors to manufacturing face shields where 1,200 were manufactured and distributed to hospitals.

In the meantime, ITIDA with Dell Technologies co-launched a hackathon to stimulate students and startups' innovation and support their innovations that counter the spread of the new Coronavirus using emerging technologies.

Source: <https://www.egypttoday.com/Article/6/84767/Egypt%E2%80%99s-IT-Agency-Mobilizes-Resources-to-Combat-COVID-19>