

## University Scientists “Race” against Covid-19 Pandemic Spread

The research group is also working non-stop on refining their ventilator product to meet hospital requirements. As Covid-19 cases increase daily all over the world, so does the demand for ventilators. There are very few ventilators installed in leading Vietnam hospitals and the DTU Institute of Research & Development (IRD) is racing against time to research and manufacture their own Covid-19 ventilator.

### Going from learning to practice

Five months after presenting their DTU-Vent version 1.0 to the Danang People’s Committee Chairman and local medical authorities, a research group led by Dr. Le Hoang Sinh, Director of the Center for Advanced Chemistry, part of IRD, continues in the development of its invasive ventilator version 3.0, and will then seek approval from the Ministry of Health.



*DTU scientists race against time to create a ventilator Photo: AN*

The research group has spent many months in their laboratory. Dr. Sinh explained: *“When the epidemic broke out, several universities and others started learning about the development of ventilators, to assist responsibly in community healthcare. The university research group sat down and discussed plans to manufacture their own ventilator that fully met local and international standards.”*

According to Dr. Sinh, the main difficulty when creating the ventilator was to precisely integrate the control and mechanical systems, because a specific amount of air must be pumped into the body in a short time with perfect accuracy. Their objective was not to develop a basic ventilator but to produce one that perfectly met all current requirements.

*“The pressure of the pandemic forced us to work feverishly in our laboratory,”* he said. *“We worked for seven days without rest, sometimes even through the night to produce version 1.0. Then we needed another month to hone version 3.0 to meet all the required functionality. In addition to treating the more severe cases who need to breathe through an endotracheal tube, the DTU-Vent is also equipped with remote control, so that medical staff don’t need to interact directly with the patients.”*



*The DTU-Vent version 3.0 Photo: AN*

A university spokesperson stated that DTU is testing the ventilator at a major hospital in Hanoi before submitting it to the licensing authorities for subsequent implementation.

**Putting research achievements into everyday day use**

Dr. Sinh decided to return to Vietnam to do research and contribute to society. He always burns with a desire to put his findings into everyday use.

He also told us about his most recent research, concerning on heat-resistant glass manufacturing for buildings and cars. The glass changes color and temperature, depending on outside lighting conditions. The Vingroup Corporation has already invested in the project and, if the research is successful, the glass can be used widely.



*Scientists recently focus their research on fighting the pandemic Photo: AN*

*“In developed countries, a great many practical research products originate in universities,” said Dr. Sinh. “Large companies usually work with them and invest in the products until they reach the marketplace. This isn’t possible in Vietnam yet however, where new research is usually limited to the publication of papers in international journals, which may then lead to the creation of products and industrial manufacturing. However, this requires huge amounts of money, which universities can’t afford and is why they need government or corporate backing.”*

Like many other scientists who returned after studying overseas, Dr. Sinh aspires to a professional research environment where researchers’ knowledge can be put to practical use in everyday life for community and national development.

The DTU-Vent example is the continuation of the university’s research being connected to everyday life. Previously, the “Using 3D Virtual Reality Technology to Simulate the Human body for Health Science Education & Research” project won first prize at the 2017 Vietnam Talent Awards, a Sao Khue award in 2018, a silver medal at the 2018 ASEAN ICT Awards and second prize at the “Made in Vietnam“ potential products in 2020.

*(Media Center)*