

# UNIVERSITY OF DAR ES SALAAM



## UNIVERSITY OF DAR ES SALAAM INVOLVEMENT IN THE FIGHT AGAINST THE COVID-19 PANDEMIC

Since the announcement of the first COVID-19 case in Tanzania on 16<sup>th</sup> March 2020, the Government has instituted several measures to stop further spread of the disease. We wish to bring to the attention of the University of Dar es Salaam and the general community that the University of Dar es Salaam has joined the Government and other stakeholders in this effort to stop the spread of the coronavirus and finding various remedies against COVID-19 as stipulated below.

### **1. Design, fabrication and distribution of automatic and foot-activated handwashing machines**

The University of Dar es Salaam, through the Technology Development and Transfer Centre (TDTC) has designed and developed two types of hand-washing machines, automatic and foot operated. These machines consist of a 250-litre storage water tank and are specifically designed for institutions that serve a large number of people such as hospitals, factories and market places. The machines can dispense liquid soap and water by putting hands near the sensors for the automatic machine or by pressing the pedals for the foot-operated machine. The advantage of these machines are that they allow handwashing without touching the tap, which is considered risky. So far, The University has sold the machines to different organizations such as AMREF, BOT, NHIF, TAA, WFP, TOL, TAMISEMI, Dar es Salaam City Council and TANESCO to mention only a few.

In addition, the University of Dar es Salaam will distribute 20 hand washing machines to government hospitals designated for care and treatment of COVID-19 patients in Dar es Salaam. Other machines will be distributed to Bus/Daladala terminals including but not limited to Ubungo, Mbezi, Mbagala, Tegeta, Kijitonyama, Mawasiliano, Tandika as well as Ferry terminals at Magogoni and Kigamboni. UDSM will make a follow-up on their usability, effectiveness and sustainability through a survey that will also further inform the product quality and improvement on the design and fabrication.

## **2. Production of three-layer hi-tech masks**

The Textile Unit of the Department of Mechanical and Industrial Engineering in collaboration with the Technology Development and Transfer Centre (TDTC) of the University of Dar es Salaam has started production of three layer hi-tech face masks. The daily production capacity is 250 masks. The masks are already being used by the members of the University community. The masks being produced are made from three layers of fabrics; two outer woven fabrics and a non-woven fabric embedded between them. The masks are user-friendly, washable and re-usable. The properties of the mask materials are as follows:

- (i) The outer fabric (blue coloured) is a woven cotton fabric with a warp density of 22 ends/cm and weft density of 19 ends/cm
- (ii) The inner fabric (white coloured) - has a warp density of 45 ends/cm and weft density of 26 picks/cm.
- (iii) The intermediate layer is a lightweight non-woven fabric made from spunbond technology.

Each fabric is responsible for prevention of penetration of aerosol containing the coronavirus, with the intermediate layer (non-woven layer) enhancing the filtration of the aerosol particles due to its much more closed pore structure.

## **3. Conducting of a survey to establish the quality of the cloth face masks**

The University of Dar es Salaam through its various units has completed a survey conducted to assess the quality of the face masks made using textile and other cloth materials by various institutions and individual entrepreneurs. The results of this survey have indicated the suitability of the materials used in making the face masks by measuring their density and porosity. The results which will be made public very soon will offer recommendations on how best to manufacture the face masks using textile materials.

## **4. Production of hand sanitizers**

The University of Dar es Salaam has started production of hand sanitizers adhering to the WHO and TMDA standards.

## **OTHER PLANNED INTERVENTIONS**

### **1. Design and fabrication of electro-mechanical ventilator**

A team of staff members at the University of Dar es Salaam is currently working on designing and developing an electro-mechanical ventilator.

## 2. Developing of nutraceutical drinks and foods

The University is engaged in identifying, screening and analyzing available compounds and toxins in the selected natural products such as fruits, vegetables, medicinal plants for fortification and developing nutraceutical products. The focus is directed to antioxidants, anti-coagulant and anti-inflammatory natural products, which provide supplement to diet and in preventing certain diseases.

## 3. Provision for Research Funds on COVID-19

The University of Dar es Salaam is encouraging its researchers to do more research related the global pandemic of COVID-19. The research could focus on economic, political and social implication of COVID-19. The University of Dar es Salaam is conducting applied research on the use of traditional medicine to treat the associated symptoms of COVID-19 particularly respiratory diseases. The University has set aside research and innovation grant amounting to **TZS 1,500,000,000/-** (One Billion Five Hundred Thousand Tanzanian Shillings) in the 2020/2021 financial year to fund proposals on the impacts fo COVID-19 and other research themes.



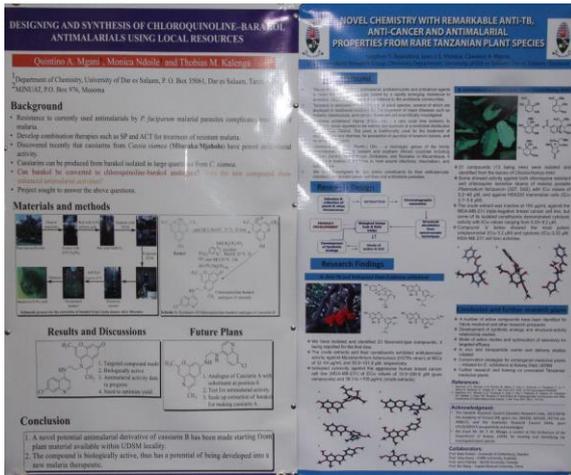
*UDSM Engineers fabricating special hand washing machine*



*The University of Dar es Salaam Polarizing Microscope for testing the quality of face masks*



*University Ethanol Processing Facility (one of major ingredients needed for producing sanitizer)*



*Applied researches going on at the University of Dar es Salaam on the use of traditional medicine to treat different diseases including Corona associated symptoms*

**ISSUED BY THE OFFICE OF DEPUTY VICE CHANCELLOR-RESEARCH**