

## University ceases production of nanomaterial and drapes for county emergency staff – May 7, 2022

### The Rouška Student Challenge with a filter for all continues and goes abroad

More than 65 kilometres of material and 30 thousand pieces of drapes were delivered by the Technical University of Liberec to the Liberec Region. The university's production ended this week and the crisis staff is not asking for more material. The student appeal, which was born at the same time as the production of the drapes, fulfilled its goal in the Czech Republic: Drapes with a filter for all. Now it is also seeing its first successes abroad.

From 16<sup>th</sup> March, the Technical University of Liberec supplied first disposable drapes made of nano-material, then nanofibre textiles and melt-blown material for the production of filters for drapes with pockets to the Regional Crisis Staff of the Liberec Region.

### Investing in science pays off

By Monday, 4 May, when we stopped production in agreement with the regional government, we had delivered 65.5 kilometres of nano- and melt-blown material, which is a mixture of nano- and microfibres, in rolls half a metre wide, to the regional crisis headquarters. In addition, more than 30,500 pieces of nanofilters, plus 4,700 pieces of disposable nanofibers in the very early days of small-scale production at TUL. The Liberec Region used these protective devices mainly for the needs of medical staff and other people on the front line.

*"Our university, and I dare say other universities, have responded flexibly to contribute to the solution of supplying protective equipment to the population. In these last few weeks, we have all been able to see, almost live and at an accelerated pace forced by the urgency of the situation, that the investment in science and research is paying off for society. I would like to thank once again our scientists, students and all the volunteers who often spent evenings and nights here and made it happen,"* says Miroslav Brzezina, Rector of the Technical University of Liberec.

People from the Faculty of Engineering, the Faculty of Science, Humanities and Education and the Institute for Nanomaterials, Advanced Technologies and Innovations and the Faculty of Textiles, were mainly involved in the production of the drapes and the material for the drapes. The volunteers who helped with the production came from all faculties.

In addition, we used a special 3D printer at NATI to print protective equipment for the Regional Hospital Liberec. We delivered 40 pieces of breathing mask attachments, 30 shields, 20 sets of door handle attachments and 50 pieces of stabilizing clutches for drapes.

*"When the crisis period is over and when we get acquainted with the new setup, especially how much money will be coming in, we will support research at the University of Liberec, because it has become clear at this time how important it is to have such human capacity available here,"* said Martin Půta, the governor of the Liberec Region, some time ago.

## **Rouches with a filter are really for everyone in the Czech Republic**

In parallel with the production of the masks, a three-member team of students from the Faculty of Economics of TUL launched the challenge Masks with a filter for all. This offered the concept of a disposable filter made of an effective functional layer that can be inserted into cloth drapes with a pocket. The aim of the student initiative was to find the capacity to produce filters in large volumes in companies in the Czech Republic and to connect them with domestic manufacturers of cloth drapes with pockets. This has been successful and today on the website rousky.tul.cz interested parties can find links to three e-shops through which private entities offer melt-blown filter material for all. All you have to do is order metres of material to be cut or ready-made filters ready to be inserted into the cloth drape. The students from the challenge mainly helped with the connection of the companies, our scientists helped with the fine-tuning of the process and the material.

*"An extraordinary achievement in the first days of the uncertainty of the outbreak was the launch of production of nanofibre disposable filters for pocket drapes at Drylock Technologies in Hrádek nad Nisou. The initial nanomaterial was supplied by the Liberec company Elmarco. The impetus for this production came jointly from us and the Liberec Region and the companies responded to it within an incredibly short period of time,"* says Professor David Lukáš from the Department of Chemistry at the Faculty of Science, Humanities and Education at TUL, who together with Professor Josef Šedlbauer initiated the production of protective nanomaterials against coronavirus at TUL.

Our scientists also helped to set up a melt-blown nonwoven filter production line at OBROKOV. It was through the involvement of this company that the mission of the Liberec challenge "Drapes with a filter for all" in the Czech Republic was fulfilled. Filters for drapes are produced in large quantities and are commonly available at very low prices to all interested parties.

## **Senegal, Cape Verde, Poland... the student challenge goes beyond borders**

The student team has not stopped working; it has also managed to "export" its concept of connecting businesses and households across borders. Disposable filters of the "Liberec" type have already travelled to Senegal and Cape Verde. *"We have sent sample pieces there and it is possible that the whole concept will be taken over. There has been a lot of interest, and in the case of Cape Verde, the Ministry of Finance there contacted us,"* says David Svoboda of the Roušky with a Filter for All initiative. He adds that Myanmar, France, Spain, Slovakia, New Caledonia and Poland have also expressed interest.

This is where the situation looks most promising. *"The Poles want to follow up on our challenge and these days they are trying to reach out to their companies that could produce filter material,"* says David Svoboda, a student at the Faculty of Economics at TUL, and concludes, *"Our task is complete in the Czech Republic, we will see what other initiatives come from abroad."*

The success of their appeal on domestic soil was also due to the fact that they managed to establish cooperation with a number of well-known personalities: the campaign was joined

and supported by Lucie Bílá, Václav Marhoul, Eva Holubová, Ondřej Brzobohatý, Eva Samková and Kovy. For example, Barbora Poláková, Martha Issová, Pavel Liška and others bought 58,000 melt-blown filters and distributed them in homes for the elderly and hospitals. You can see a video of their Filter Tour.

[Photo](#)