CERN Baltic Group –
Activities of Kaunas University of Technology 2020

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12th of October, 2020

Technical Student Programme

Student applications:

- on 25th of October, 2019
- on 25th of March, 2020

(1 student from Faculty of Mathematics and Natural Science)

International Masterclasses

➢ 26th of March, 2020

CMS International Masterclass Hands on Particle Physics

https://cms.physicsmasterclasses.org/cms.html

https://masterclass.ktu.edu/

➢ 30th of March, 2020 Hadron Therapy Masterclass

https://hadrontherapy.ktu.edu/

“Accelerator Schools”- accelerator and/or particle physics

22nd of March – 4th of April, 2020

http://cas.web.cern.ch/schools/kaunas-2020

https://indico.cern.ch/event/842297/

ktu faculty of mathematics and natural sciences 1922

RF for Accelerators, 22 March - 4 April 2020, Kaunas, Lithuania

ktu kauno technologijos universitetas 1922

Registration is open

RELATED LINKS

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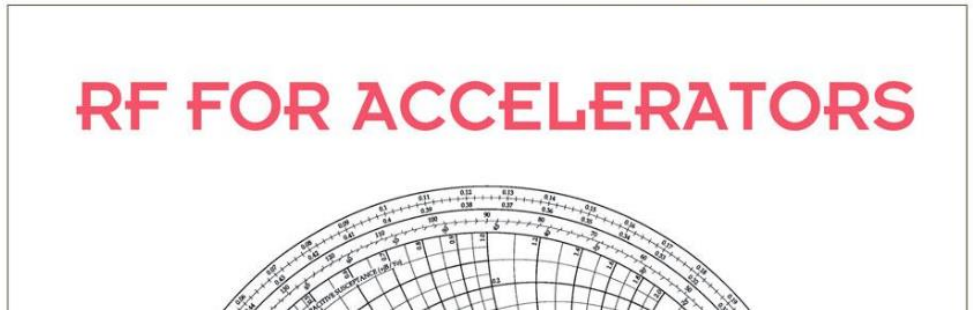
Europa Royale Hotel

Kaunas University of Technology

Main | Overview | Financial aspects | Visas | Practical info

In collaboration with the Kaunas University of Technology (KTU) the CERN accelerator school is organizing a topical course on:



Task force against COVID-19

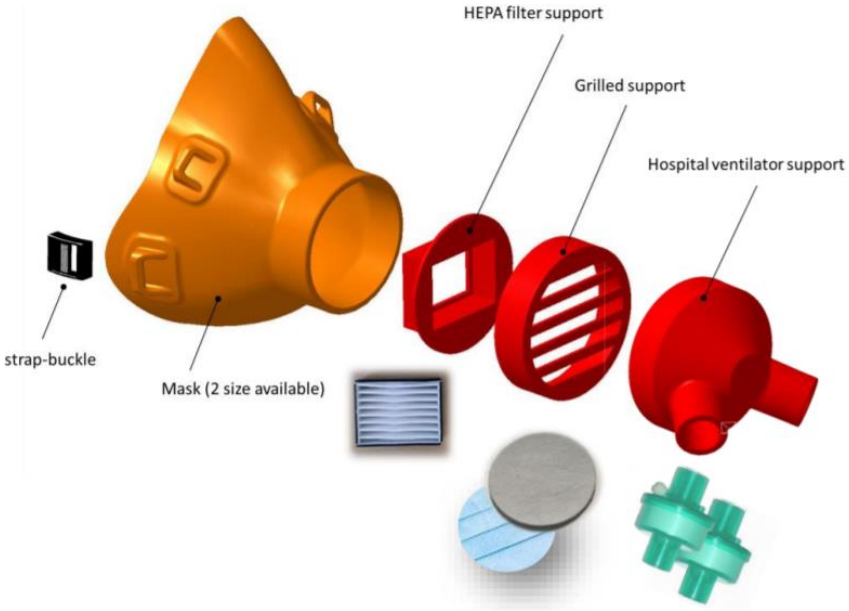
Proposals were following:

1. **Development of multilayered seamless knitted personalized (different sizes) face masks with enhanced filtration and antimicrobial properties. Face masks of this type ensure required filtration properties, are comfortable (due to ergonomic construction) and significantly reduce amount of non-recyclable waste as can be worn many times (after domestic washing in high temperature or sterilization).**
2. Application of high-power based ultrasound technologies for joining of polymer parts of the protective masks.
3. Development of the verification marks for COVID-19 safety management.
4. Protocols defining the sterilization strategies are important in order to understanding the protection levels ensured by the reuse of the respirators used against the corona virus. ZnO nanostructures are known as self-cleaning surfaces under UV illumination and could be incorporated on the outer most surfaces of the respirators and protective masks for efficient sterilization under UV light.
5. Copper and Cu oxides are known for their antiviral activity. Antibacterial and marine antifouling properties of hard and corrosion resistant diamond like carbon films with embedded carbon nanoparticles are already revealed. Thus, hard and corrosion resistant diamond like carbon films with embedded carbon nanoparticles potentially would be used as a protective antiviral films.
6. Application of high-power based ultrasound technologies for generation of disinfection liquid aerosol fog in order to perform disinfection of rooms, equipment or clothes. Also, for disinfection of protective equipment in the case of second use.
7. Development and design of ventilation systems with UVC and ozone solutions.
8. We can provide control solutions of mechanical devices, can apply existing or develop dedicated sensor that is needed to make automatic lung ventilation device; expertise and knowledge to develop automatic decision making algorithm, which is based on machine learning methods.
9. Solitary solutions to mathematical models governing the dynamics of COVID-19 pandemic.
10. Probabilistic assessment of resistance parameters for COVID-19 related decisions.
11. All the computing power are available at Kaunas University of Technology.

Task force against COVID-19

Fernando Baltasar Dos Santos Pedrosa *(CERN, EN/ACE)*

"Through the CERN Baltic Group, two filter options to use the grilled support of the mask are under development (1 that is ***washable*** and 1 that is **biodegradable.** The washable option is ready to be tested." (20th of May, 2020, at CERN seminar).



Prof. Daiva Mikučionienė and Prof. Rimvydas Milašius *(Faculty of Mechanical Engineering and Design)*

„The washable textile materials for the filter application were sent to CERN for the test (June, 2020). Up to know we are waiting for the results."

Participation in joint projects/calls

Lithuanian BIC of CERN Technologies

http://kaunomtp.lt/lithuanian-bic-of-cern-technologies

CERN technology

MINISTRY OF THE ECONOMY AND INNOVATION

LITHUANIAN INNOVATION CENTRE

SUNRISE VALLEY SCIENCE AND TECHNOLOGY PARK

Kaunas Science and Technology Park

➢ 26th of March, 2020

BUSINESS INCUBATION CENTRE

ktu institute of materials science 1922

PHASE I Application (January, 2020):

"Materials and technologies for the efficient micro-Resistive WELL (μ-RWELL) detector"

Prof. Sigitas Tamulevičius (Institute of Materials Science of Kaunas University of Technology)

Participation in joint projects/calls

Lithuanian Academy of Sciences
Research and experimental development projects are related to the activities of the European Organization for Nuclear Research (CERN).

“Experimental characterization of thin films and structures used in vacuum chamber for particle accelerators” (2019-2020)
Project leader Prof. Sigitas Tamulevičius
(In colloboration with Dr. Mauro Taborelli, VSC Group, CERN)

The internet CBG in lithuanian website is in progress ...