

## Development of mechanoluminescent thin films for real time stress detectors

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I N V E S T I N G   I N   Y O U R   F U T U R E

Project No: 1.1.1.1/20/A/138

Duration: 01.04.2021. – 30.09.2023.

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Project partner: Sidrabe Vacuum Ltd, BSc Matiss Piesins.

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About project implementation (01.01.2022 – 31.03.2022)

During the research period of the project No.1.1.1.1 / 20 / A / 138 “Development of mechanoluminescent thin films for real-time stress detectors”, the adaption of laboratory equipment for planned technological research was continued.

Based on the feedback from the LU CFI on the parameters of the coated samples, additional samples of heat-resistant substrate materials were prepared. The coatings were prepared using a  $\text{SrAl}_2\text{O}_4$  target doped with Eu and Dy. Increased coating thickness was determined for further studies.

Experimental studies with variable coating process parameters were performed to improve the crystallinity of functional mechanical luminescent thin films. Coating series were produced by increasing the process temperature, changing the distance between the sample substrate and the sputtering source target, and by providing an additional substrate pre-cleaning and pre-heating before the technological process.