Development of mechanoluminescent thin films for real time stress detectors

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, B.A.Sc. Matiss Piesins.

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About project implementation (01.07.2021 – 30.09.2021)

Within the start-up phase 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.

A price survey was conducted for necessary additional target material procurement. Materials have been purchased and delivered.

Based on the feedback from testing of initial samples, an experimental study was performed to ensure sufficient adhesion of the functional mechanoluminescent thin films. Correct adhesion was obtained by optimizing the pre-treatment of the substrate by applying an ion gun.

Series of coatings were produced by coating samples with different thin film thicknesses to search for detectable mechanoluminescent functionality. The improved adhesion allowed to create coatings with thicknesses up to several micrometers, that is up to ten times more than on the earlier samples.