



NACIONĀLAIS
ATTĪSTĪBAS
PLĀNS 2020



EIROPAS SAVIENĪBA
Eiropas Reģionālās
attīstības fonds

IEGULDĪJUMS TAVĀ NĀKOTNĒ

Project name: Decision tool for optimal design of smart polymer nanocomposite structures produced by 3D printing

Project contract number: 1.1.1.1/19/A/031

PROJECT IMPLEMENTATION FOR THE REPORTING PERIOD
from 01.03.2023 until 31.05.2023.

Company ZRF RITEC SIA

During the reporting period, the following actions were implemented:

1. Temperature dependences of the electrical resistance of the samples were studied. The samples were made of different filaments.
2. The temperature dependences of the samples made of different filaments on the current through the sample was studied. Temperature measurements were made using an infiSense P2 thermal imaging camera.
3. The dynamics of temperature and current changes of the sample over time after being connected to a constant voltage source were studied.
4. The temperatures at which the samples are destroyed were determined.
5. Samples from different filaments for measuring the effectiveness of electromagnetic shielding were fabricated.
6. The optimal fabrication modes were determined, samples of new electrically conductive materials *conductive filament FilaFlex* and 3DK conductive filament were made and studied. In order to optimize printing using FilaFlex filaments, it was necessary to modernize the heating procedure of the 3D printer for these materials.
7. The dependences of the linear absorption coefficients of gamma and X-ray radiation of samples made of different filaments on a radiation energy were studied.
8. Materials for the poster presentation "PARTS FOR GAMMA RADIATION DETECTORS MADE OF ELECTRICALLY CONDUCTIVE THERMOPLASTIC FILAMENTS BY ADDITIVE 3D PRINTING" for the Eleventh International Conference on Radiation, Natural Sciences, Medicine, Engineering, Technology and Ecology were prepared.

The information was prepared by: Viktors Ivanovs

Date of information preparation: 31.05.2023.