

Boosting the make-up business

Cossi Ltd. is a company focused on the production and sale of innovative cosmetics, based on unique, natural ingredients and providing comprehensive protection and skin care. The owners of the company have extensive knowledge and experience in creating cosmetics, designing processes and technologies for their production and in the implementation of cosmetic products for the European market, <https://cossi.pl/>

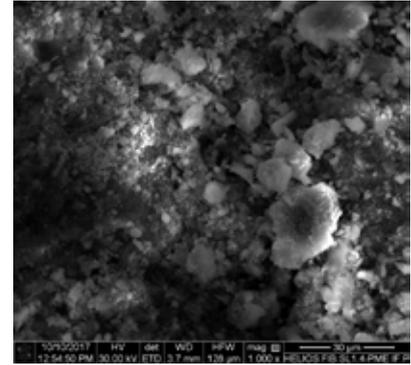
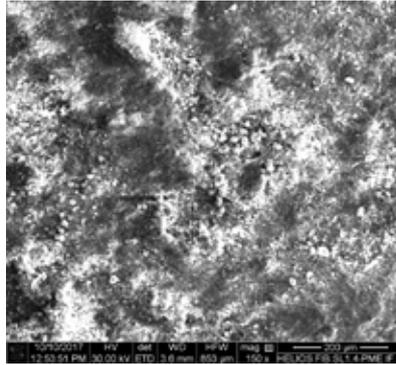
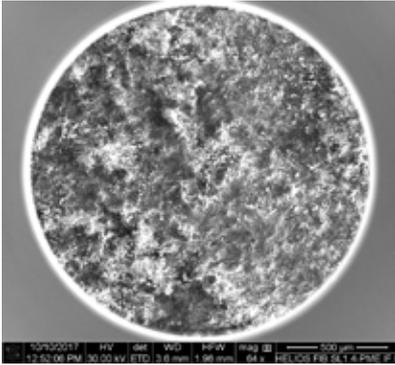


"We joined the experiment with the hope that the measurements' results will be useful for the future work on Cossi's products development, although the results did not meet our initial expectations in terms of detection of the main ingredients. Nevertheless, a new ingredient was detected which might play important role in cosmetics, however further identification is needed. No doubts, the measurements' reports we received will be the background to the next analysis. It might be necessary in the future to repeat the measurements according to the procedure of the sample preparation and its designation. The sample with more shungite will give a chance to move up the limit of detection as well as quantification which allows to identify fullerenes"

Grzegorz Sychowski, CEO of Cossi Ltd.

Searching for research services

The company realized the need in research services and was actively searching for possibilities to establish a dialogue with the research experts. Being connected to the Kielce Technology Park in Poland, the company saw a chance to get engaged into the Baltic TRAM project and use its offer for companies, promoted by the Foundation of the Innovative Initiatives. From the very start of the process the company got the valuable support by the Institute of Physics PAS in terms of defining the research problem and further identifying the relevant analytical research facilities searching for High Performance Liquid Chromatography (HPLC) measurements. The HPLC measurements proved that there were not any fullerenes in the material, and thereby the company received the knowledge allowing them to make further decisions in developing their products.



The non-homogenously multiple phases were discovered by applying under Scanning electron microscopy (SEM).

Experiment

The main objective of the performed experiment was to investigate the phase and elemental contents of carbon mineral, being used in the production of cosmetics. The purpose with the measurements was to determine the fullerene content.

The mineral was investigated by spectroscopic and diffraction methods. The studies were performed for mineral in form of lump and powder as well for the water extract. For estimation of element contents and mapping the electron scanning microscopy with energy dispersive spectroscopy and photoelectron spectroscopy were used. Next to find the presence of fullerenes the Infra-Red and RAMAN spectroscopy was applied. All applied techniques indicated that content of fullerene in investigated samples is below the limit of their sensitivity. Several elements beside carbon were detected in the mineral (Si, Fe, K, Al, S, O). Additionally, the X-ray photoelectron spectroscopy measurements reported non-homogeneously distributed

Rh and Nd. Additionally, the X-Ray Diffraction measurements confirmed additional minority phases.

Techniques applied?

The measurements included the application of Scanning electron microscopy (SEM), X-ray photoelectron spectroscopy (XPS), X-Ray Diffraction (XRD), Infra-Red and RAMAN spectroscopy

Materials used?

The experiment studied carbon mineral which is used in the production of cosmetics products.

Findings?

The experiment shows that natural mineral is non-homogenous in terms of element distributions as well as phases with significant content of amorphous fraction. The absence of fullerenes in the tested material was discovered, validated and notified by the company.

For more information visit www.baltic-tram.eu

