INVESTIGATIONS OF MAGNETIC PARTICLES FROM THE ROOFS.

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Introduction: Micrometeorites are objects of great interest. They can be found in different environments [1, 2, 3]. Many years they were studied in natural environment. After the work of Jon Larsen [4] a lot of scientist became interest in searching micrometeorites in urban territories. In this work we present investigations of magnetic particles from roofs.

Object of investigation: Samples for investigations were collected from flat roofs of 17 floor building. Neodymium magnet was wrapped into the zip-lock bag. The magnet was carried out at a distance as close as possible to the roof. Once enough material had accumulated, the bag was turned inside out. This procedure was repeated several times.

Methods: Firstly, all the collected material was viewed with the eyes without the use of microscopes. With the help of a needle, spherical objects were pulled out. After the samples were transferred to a glass slide for examination on microscopes. An optical microscope (Zeiss) was used to study the texture. Then all spherules were studied using a scanning electron microscope «Merlin» at the Interdisciplinary Center for Analytical Microscopy, Kazan Federal University. For many samples, the elemental composition and photographs of the surface were obtained.

Results: In the process of research, micrometeorites and spherules were identified, which were formed during the welding process. The average size of technogenic spheres was 200-500 microns. The criterion for separating objects into technogenic and microspherules was the elemental composition; technogenic particles always contained a greater amount of impurities. Another distinguishing feature is the surface structure. Micrometeorites are characterized by dendritic and skeletal, mosaic surface types. Smallest ones, which needs to be sampled under microscope, not studied yet.

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