

Scanning electron microscopy as a useful tool for the analysis of non-conductive materials

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Abstract:

Scanning electron microscopy (SEM) in the analysis of non-conductive samples became one of the most important methods for the investigation of material properties. In this work, we used SEM microstructure analysis for the investigation of the origin of cracks in granite composites and also, we tested the porosity inside the regenerated carbon biowaste, potentially used as a clean source of carbon for the future applications in materials production. Additionally, the porosity of small particles used for the moulding processes of plastics was also tested. The importance of the microstructure investigation was supported by Energy-Dispersive X-ray Spectroscopy (EDS) often used for the chemical composition evaluation of these non-conductive materials.

Key words:

scanning electron microscopy, energy-dispersive X-ray spectroscopy, non-conductive materials, fractography, carbon porosity

