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A NEW COLORIMETRIC APPARATUS FOR MARINE GEOLOGY AND LITHOSTRATIGRAPHY

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In marine geology, there is a problem of a scientific and technical nature, which consists in the inability to see, fix and, accordingly, study the color and structure of sediments in the initial state in which they are on the seabed under the water column. The natural environment of sedimentation is very different from the environment into which sediments in the form of cores fall during the sampling process (oxidizing atmosphere). The latter leads to rapid and irreversible changes in color and structure. The problem is solved by a new camera-based colorimetric apparatus. The new apparatus records the color and structure of marine sediment cores with unprecedentedly high speed and resolution, amounting to 2 min per core meter and 0.067 mm, respectively, according to ISO standards without any distortions, in contrast to the main portable colorimetric apparatus – the colorimeter. The relationship between colorimetric and geochemical characteristics of sediments and the possibility of using obtained data in lithostratigraphy and paleoreconstructions are shown. The new apparatus can be successfully applied not only in marine geology, but also in a wide variety of areas – from metallurgy to the food industry – where accurate color quantification is required.

Keywords: color, chroma, structure, marine sediment cores, camera-based colorimetric apparatus, colorimeter, marine geology, lithostratigraphy, paleoreconstructions

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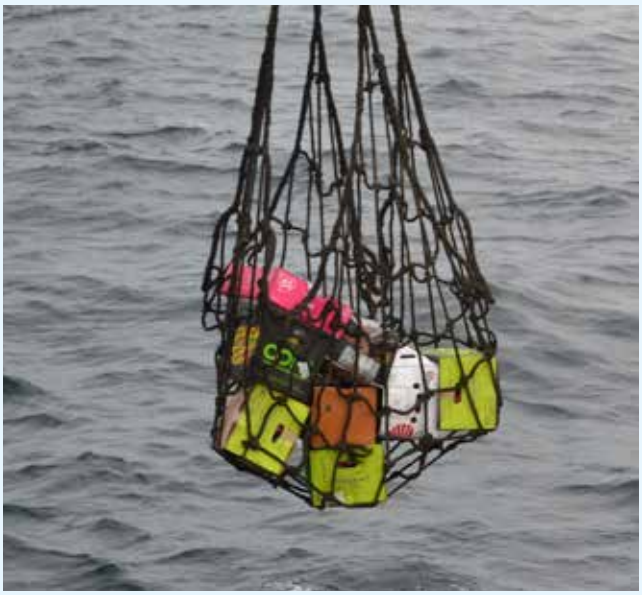

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