Carbon Dioxide Snow Cleaning of Paper

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Abstract

Cleaning of particles from smooth and rough paper surfaces was investigated using a high-speed CO₂ snow jet. The measurements included characterization of the jet properties, determination of the cleaning efficiency, and evaluation of the possible adverse effects. The method was compared with the nitrogen jet cleaning and the dry cleaning by commercial materials. The results showed that the CO₂ snow jet is able to effectively remove particles from the paper surface and did not cause any observable degradation. The CO₂ snow jet cleaning compared with the mechanical dry cleaning showed similar effectiveness without any adverse effects on the paper surface. It was proved that the CO₂ snow technique is a suitable method for cleaning of common types of paper materials.

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