

Abstract Submitted
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Memories in paste: their applications to control crack patterns

AKIO NAKAHARA, YOUSUKE MATSUO, Nihon University — We experimentally find that a paste, i. e., a densely packed colloidal suspension with plasticity, has memories of external mechanical fields it suffered, such as flow and vibration. These memories are sustained as microscopically anisotropic network structures of colloidal particles. By drying these pastes, we find that the memories in pastes can be visualized as macroscopically anisotropic crack patterns. By using the memory effects of paste, we can imprint flow and vibration patterns into pastes to produce various crack patterns, such as lamellar, radial, ring, spiral, and so on [1]. [1] Physics Today 60 (2007), no. 9, p. 116.

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