

Non-invasive *in situ* monitoring of bone scaffold activity by speckle pattern analysis: supplement

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Supplemental Document

Non-invasive *in situ* monitoring of bone scaffold activity by speckle pattern analysis

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Supplementary Figure S1

Time history speckle pattern (THSP) of the sample in controlling experiment.

Supplementary Figure S2

3D plot and 2D map of COM matrix associated with the THSPs of the sample in controlling experiment.

Supplementary Figure S3

IM, Skewness, and AC parameters associated with the sample in controlling experiment.

Supplementary Figure S4

Average Roughness, Root Mean Square, and Kurtosis parameters of the samples.

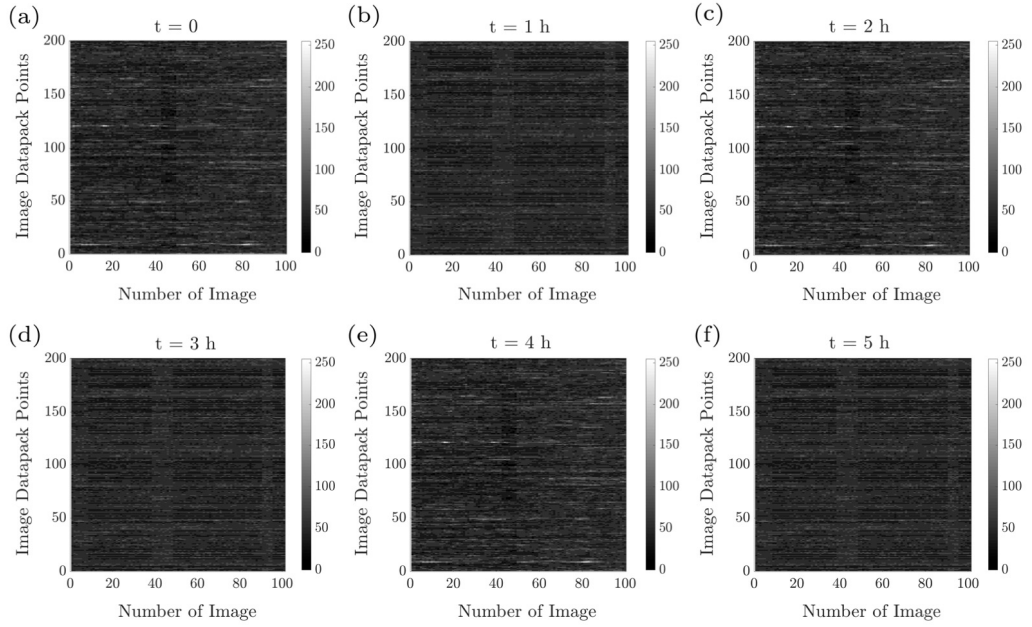


Figure S1: Time history speckle pattern (THSP) of the sample in controlling experiment. THSP matrices are built by tracking 200 random points throughout a collection of 100 speckle patterns of an empty sample at (a) the beginning of the experiment, and (b) $t=1$ h, (c) $t=2$ h, (d) $t=3$ h, (e) $t=4$ h, and (f) $t=5$ h after the experiment starts.

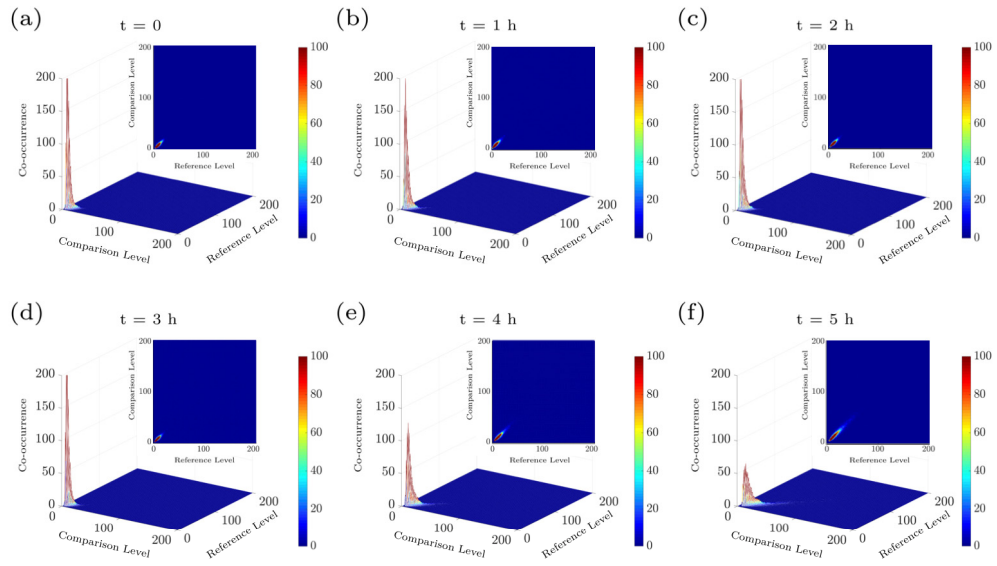


Figure S2: (a-f) 3D plot and 2D map of COM matrix, associated with the THSP matrices of controlling experiment (Fig. S1) at every 1 h after the experiment starts (a-f). Reference level and comparison level show intensity levels of i and j in Eq. 1, respectively.

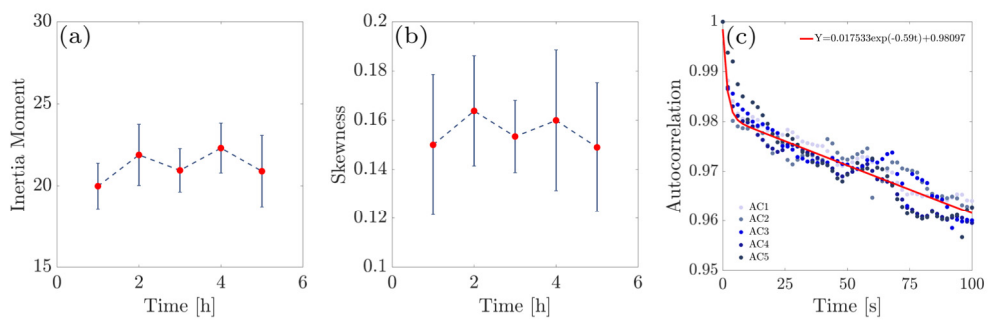


Figure S 3: (a) Average inertia moment over the THSPs associated with the sample in controlling experiment as a function of time. (b) Average skewness of 100 speckle patterns of the controlling experiment as a function of time. (c) Autocorrelation as a function of time for the controlling sample.

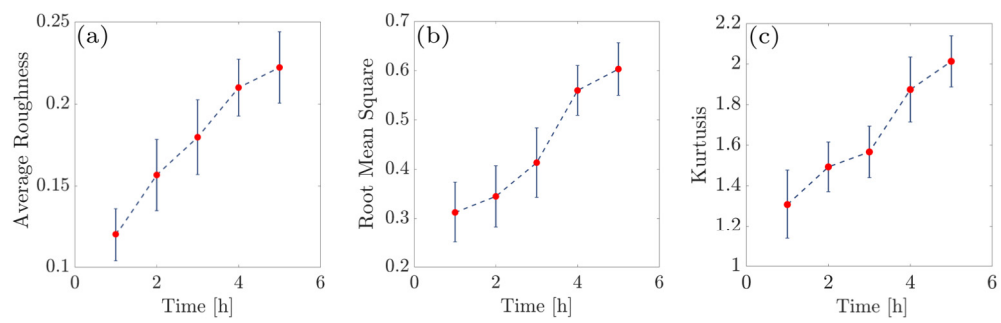


Figure S4: (a) Average roughness, (b) root mean square, and (c) kurtosis parameters of the samples.