X-ray scattering information obtained from near field speckle

SUPPLEMENTARY INFORMATION

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Supplementary Figure 1  **Schematic representation of the experimental setup used for the X-ray speckles experiment.** A monochromator (MC) produces fairly monochromatic radiation which impinges on the sample (MF), at a distance $z' = d_1 + d_2 = 28\text{ m} + 27\text{ m} = 55\text{ m}$ from the source. The superposition of the transmitted and scattered light is collected by a CCD camera positioned at distance $z$ from the sample.
Supplementary Figure 2 **Determination of the detector transfer function.** The open blue squares represent the power spectrum measured with the calibrating sample at $z=0.01$ m. The red open circles are the data after correction with the Talbot transfer function. The black dashed line is an exponential fit to the corrected data with a characteristic wavevector $q_{det} = 1/1610$ nm$^{-1}$ which corresponds to a characteristic lengthscale $L_{det} = 10 \mu m$ (i.e. about 15 pixels) associated to the detector.
Supplementary Figure 3. **Speckle images obtained at various distances from MF:** a, $z=0.008$ m. b, $z=0.013$ m. c, $z=0.028$ m. d, $z=0.053$ m. e, $z=0.103$ m. f, $z=0.153$ m. g, $z=0.403$ m. h, $z=0.803$ m. The side of each square in real space corresponds to 83 μm. Panels from a to f coincide with those presented in Fig. 2 and are reported here for convenience of the reader.