

Creation of non-cuttable material through the use of local resonance and strain rate effects

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Supplementary Information A:
Full set of images from CT-scans of the cylindrical sample

Fig. 1: Internal structure of our cylindrical sample

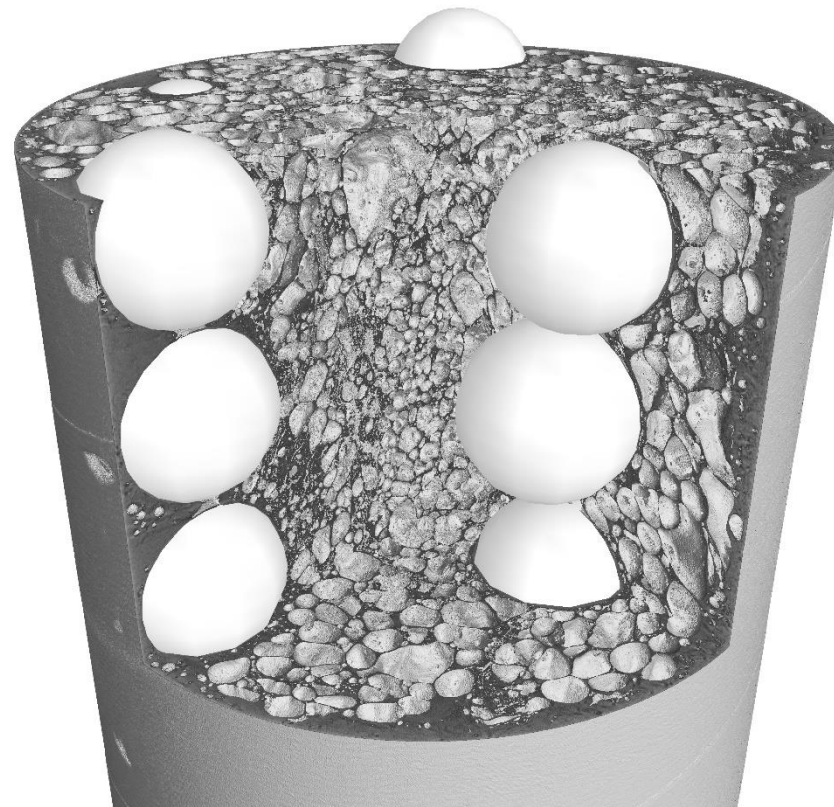


Fig. 2: Location of ceramic spheres in a cylindrical sample

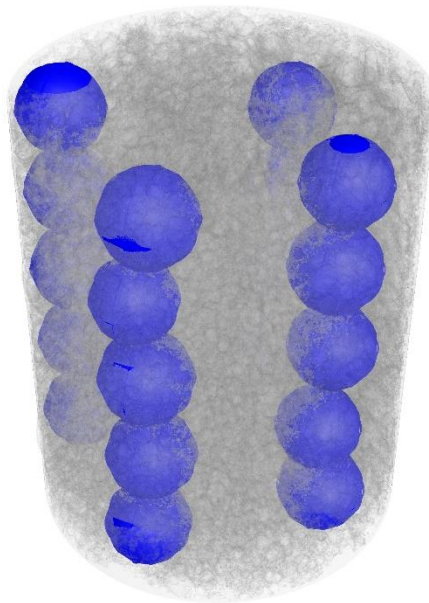


Fig. 3: Cross section of our cylindrical sample illustrating the wall thickness distribution of the aluminium foam

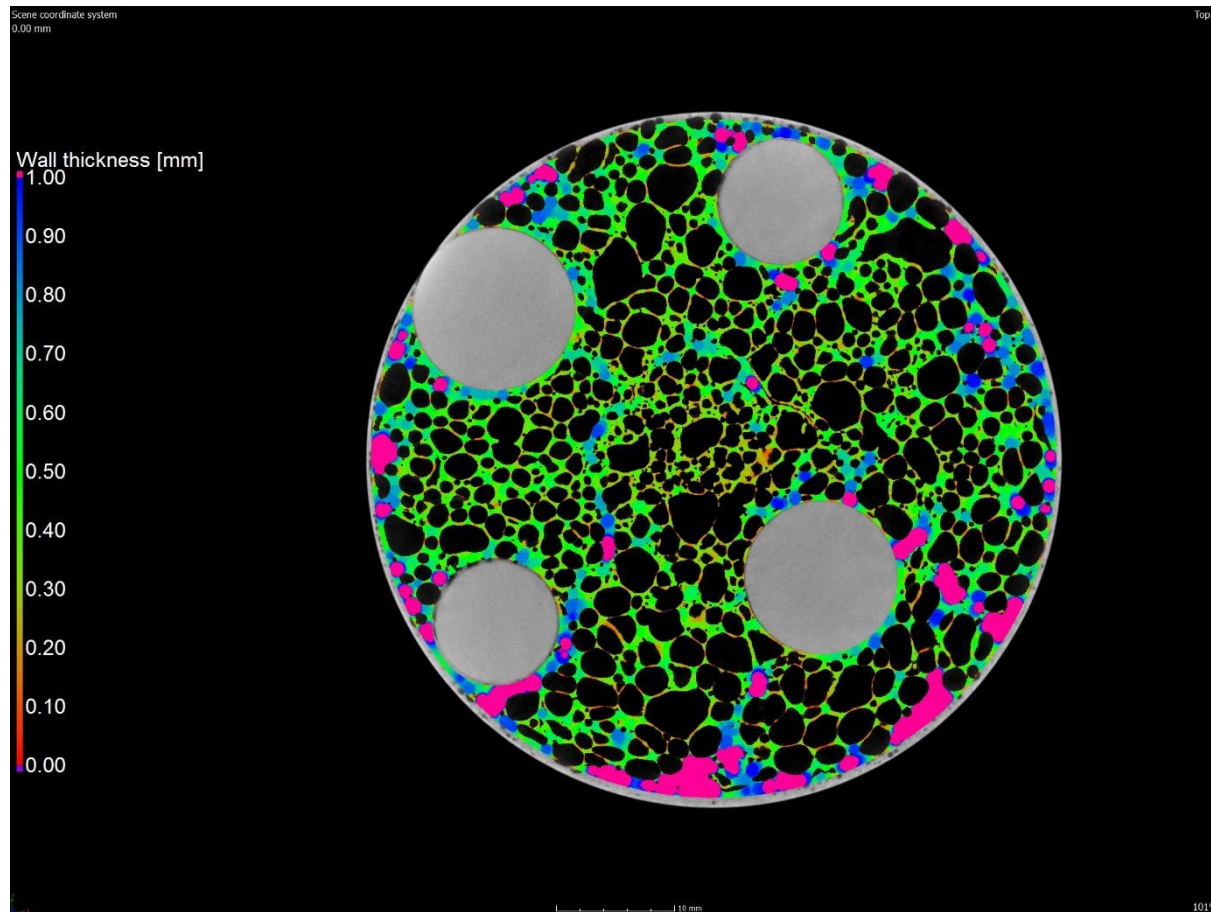


Fig. 4: Distribution of aluminium foam cell volume calculated for an exemplary area of the cylindrical sample

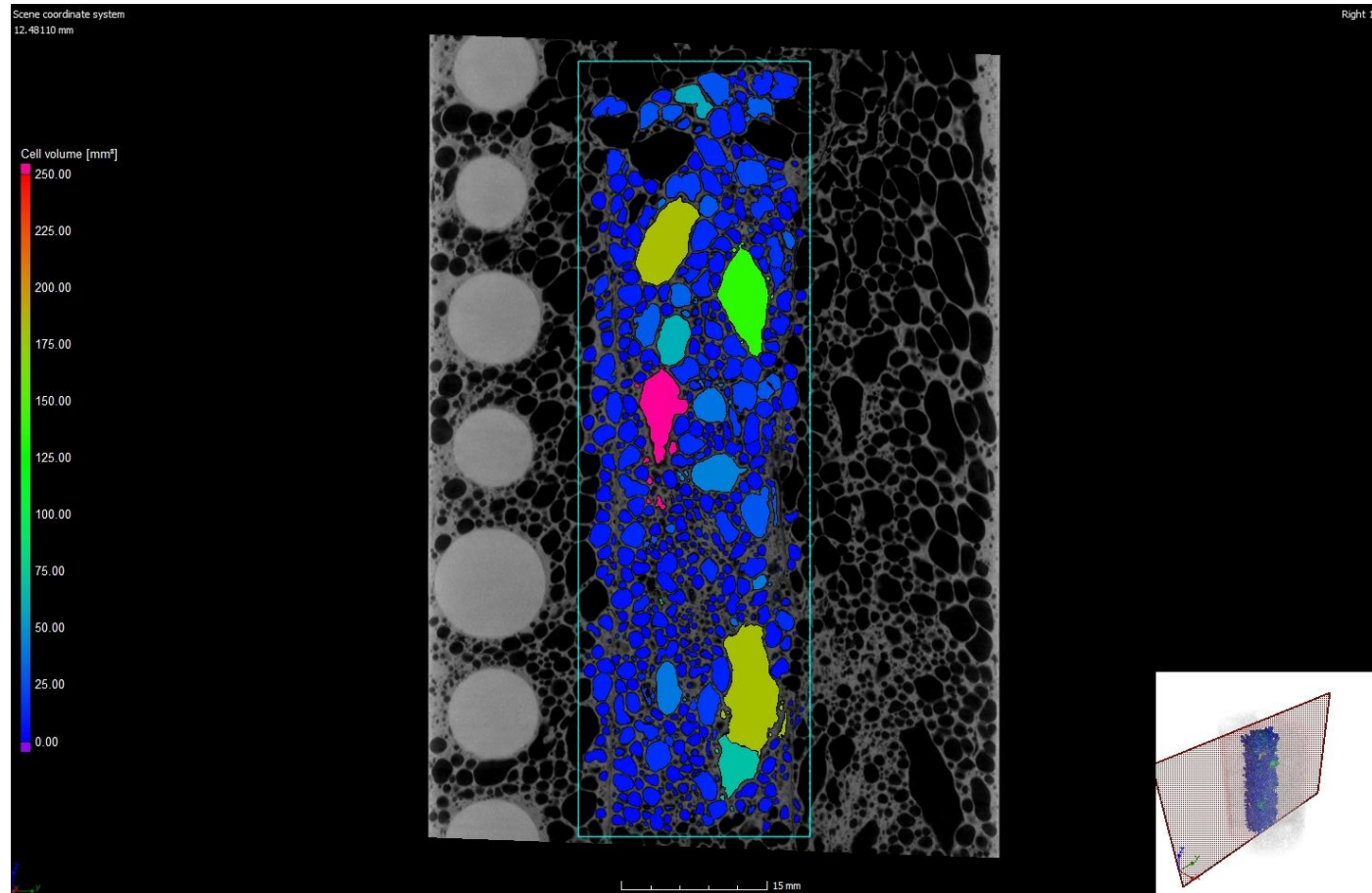


Fig. 5: Powder aggregation adjacent to the central cut of a sphere inside the cylinder obtained from CT scan

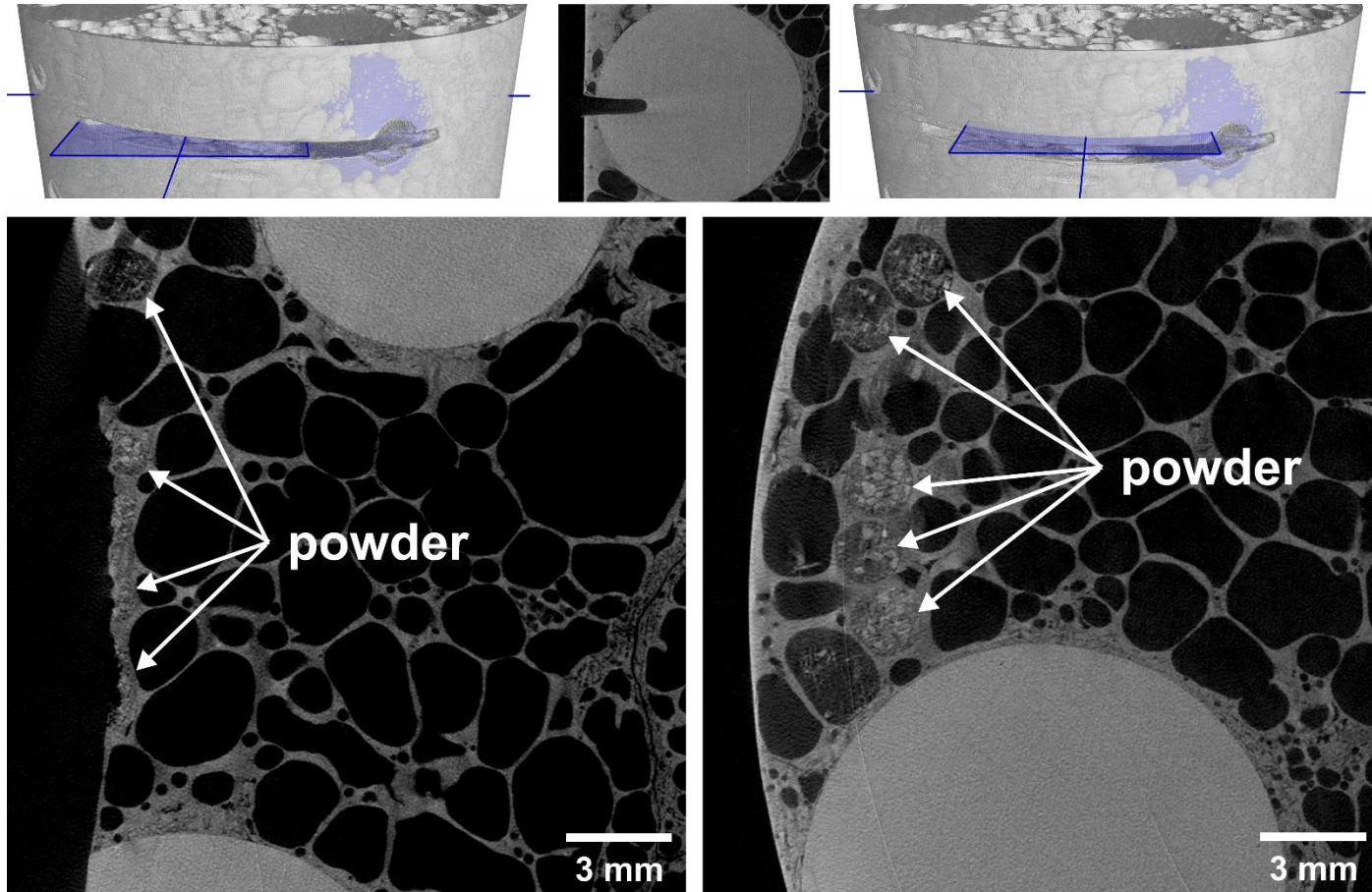


Fig. 6: Cracks inside the central cut sphere inside the cylinder obtained from CT scan

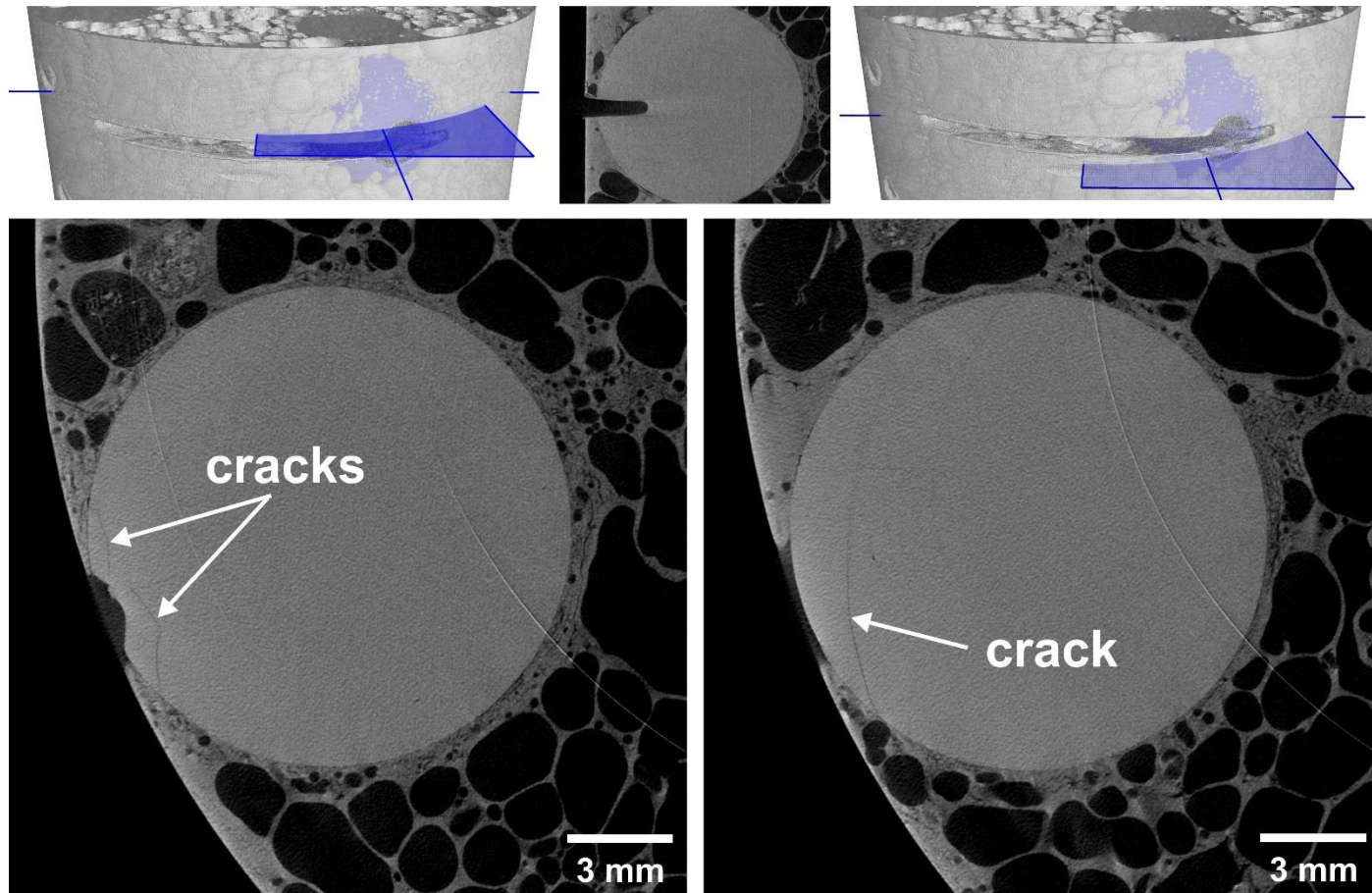


Fig. 7: 3D representation of sphere (blue), powder (red) and cracks (green) at the cut between two spheres inside the cylinder obtained from CT scan

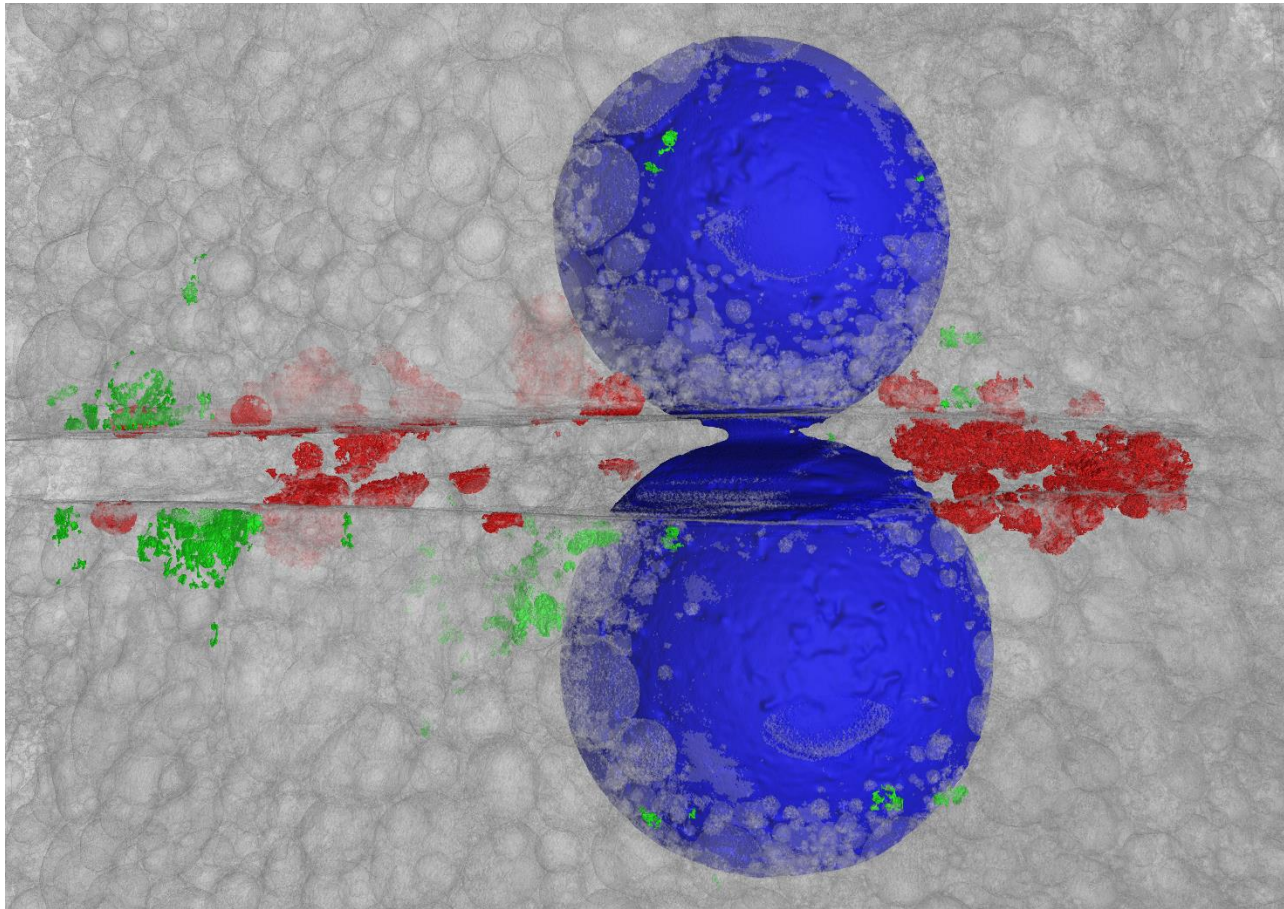


Fig. 8: Powder aggregation adjacent to the cut between two spheres inside the cylinder obtained from CT scan

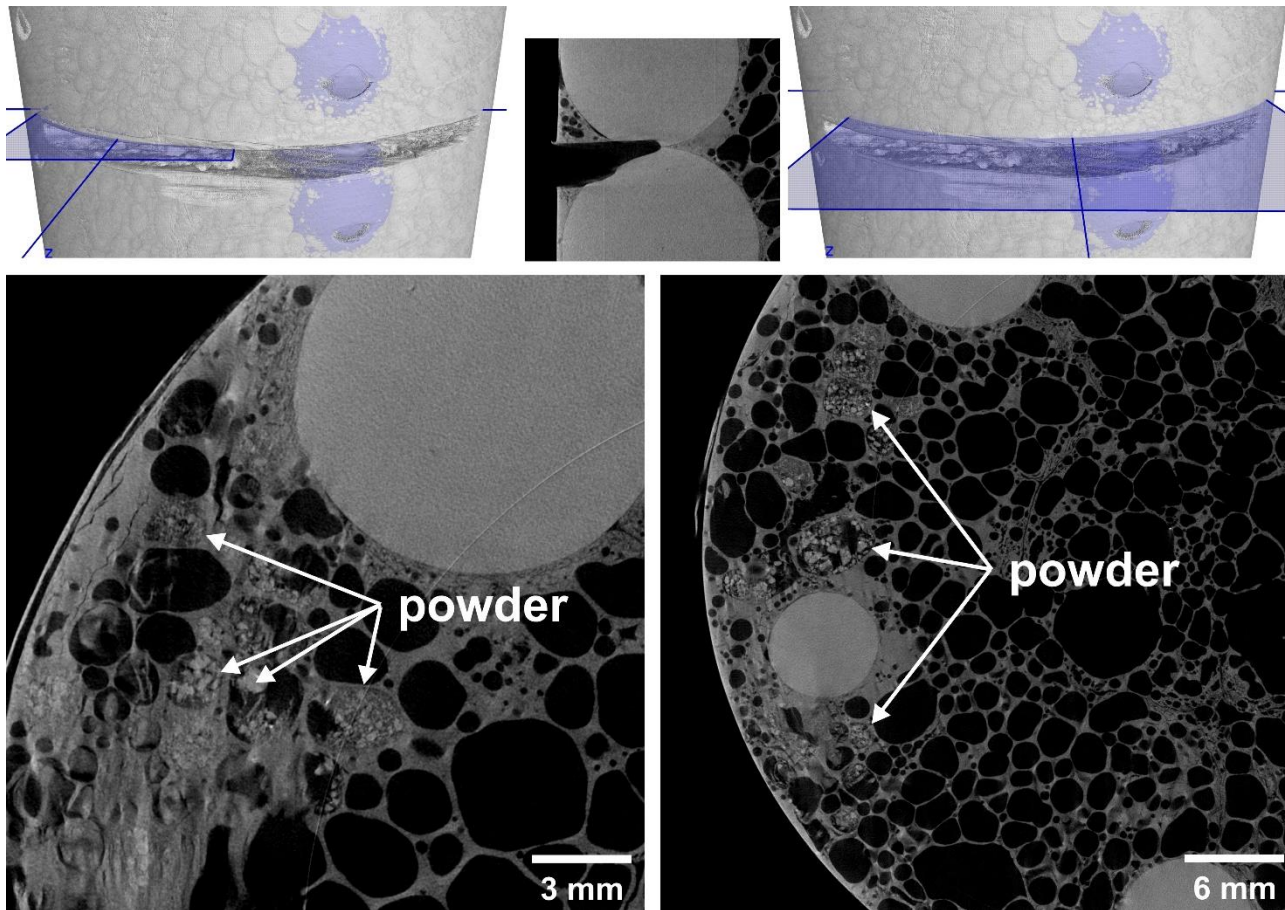


Fig. 9: Vibration-induced cracks inside the aluminium foam matrix adjacent to the cut between two spheres inside the cylinder obtained from CT scan

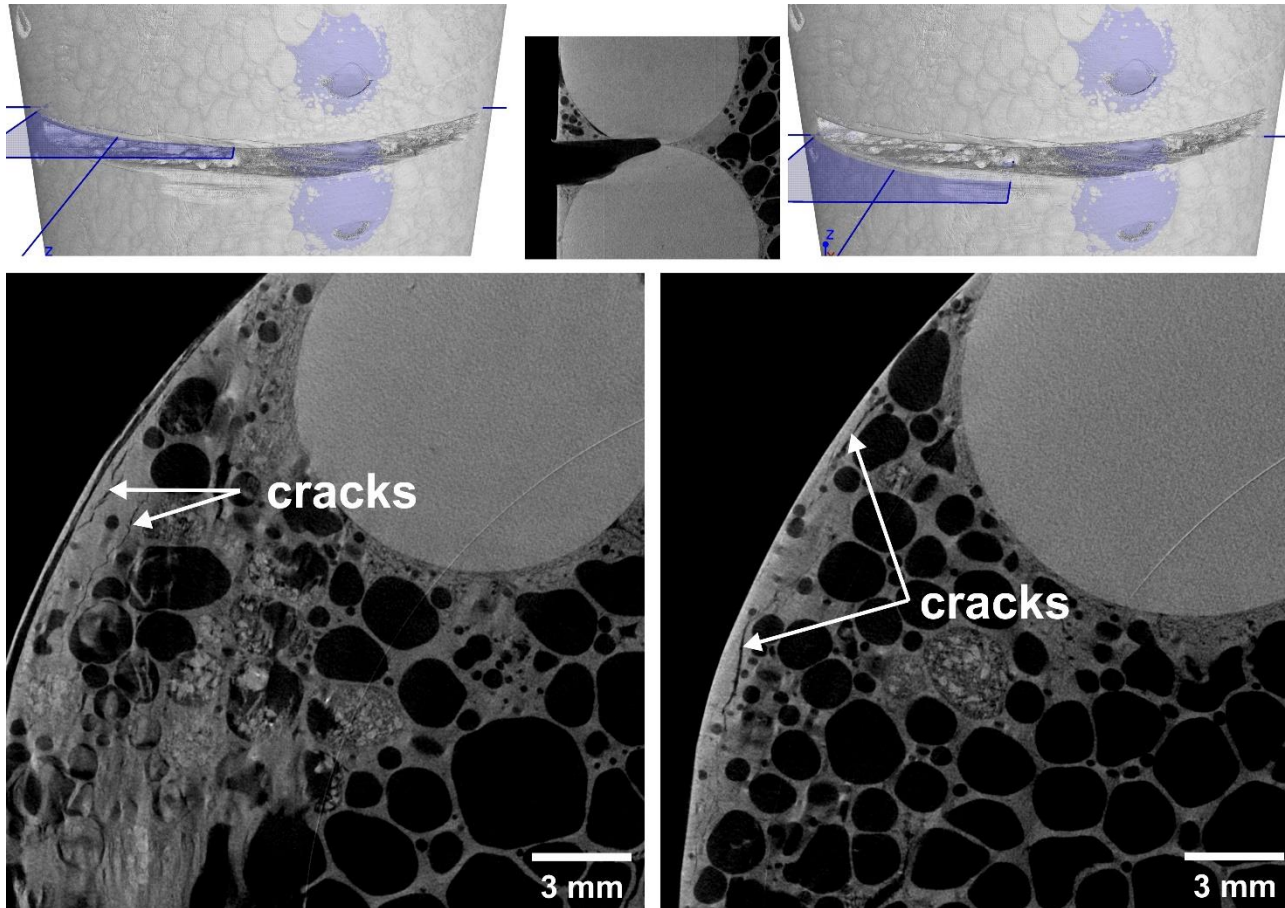


Fig. 10: Vibration-induced cracks inside the aluminium foam matrix adjacent to the cut between two spheres inside the cylinder obtained from CT scan

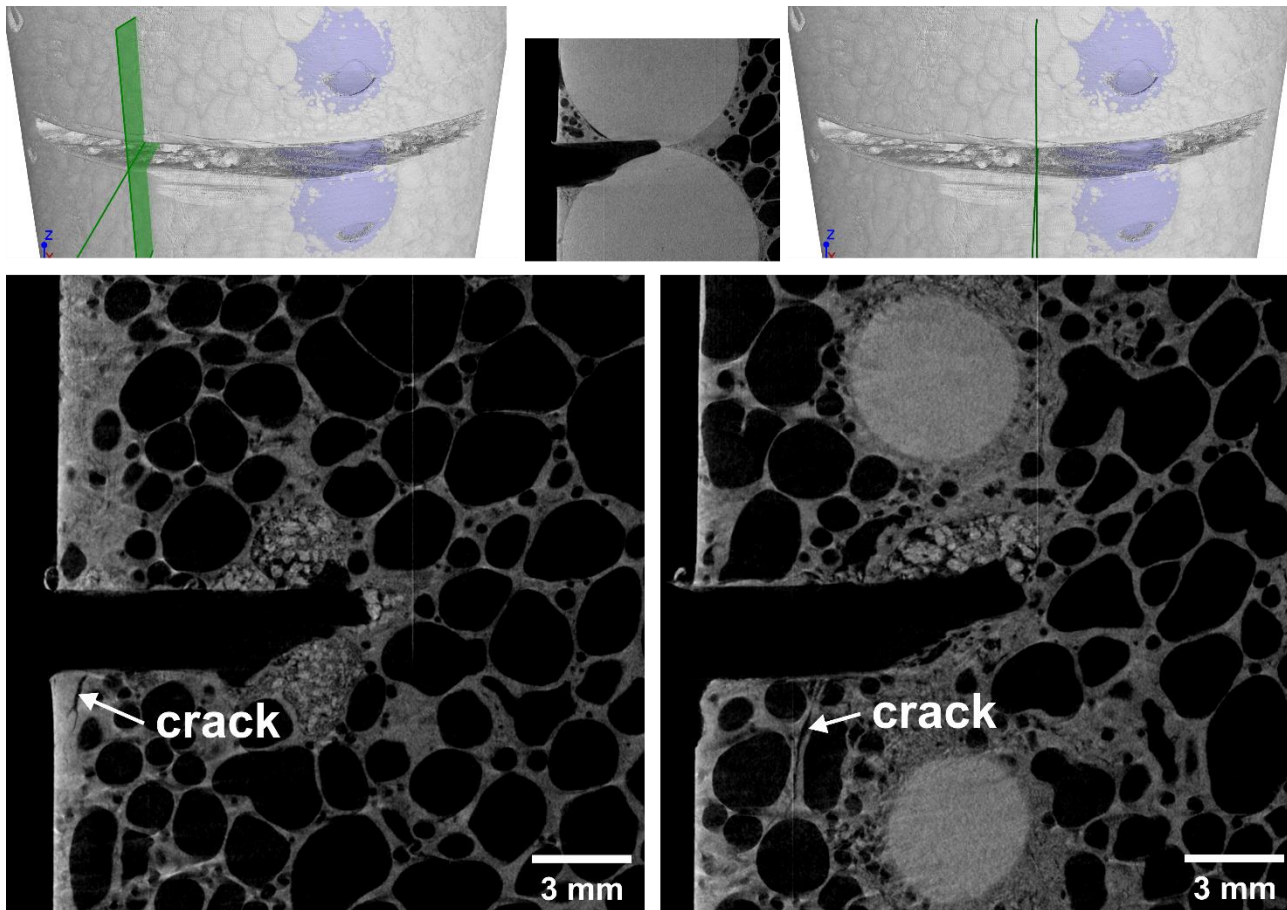


Fig. 11: 3D representation of sphere (blue), powder (red) and cracks (green) at the partial cut of a sphere inside the cylinder obtained from CT scan

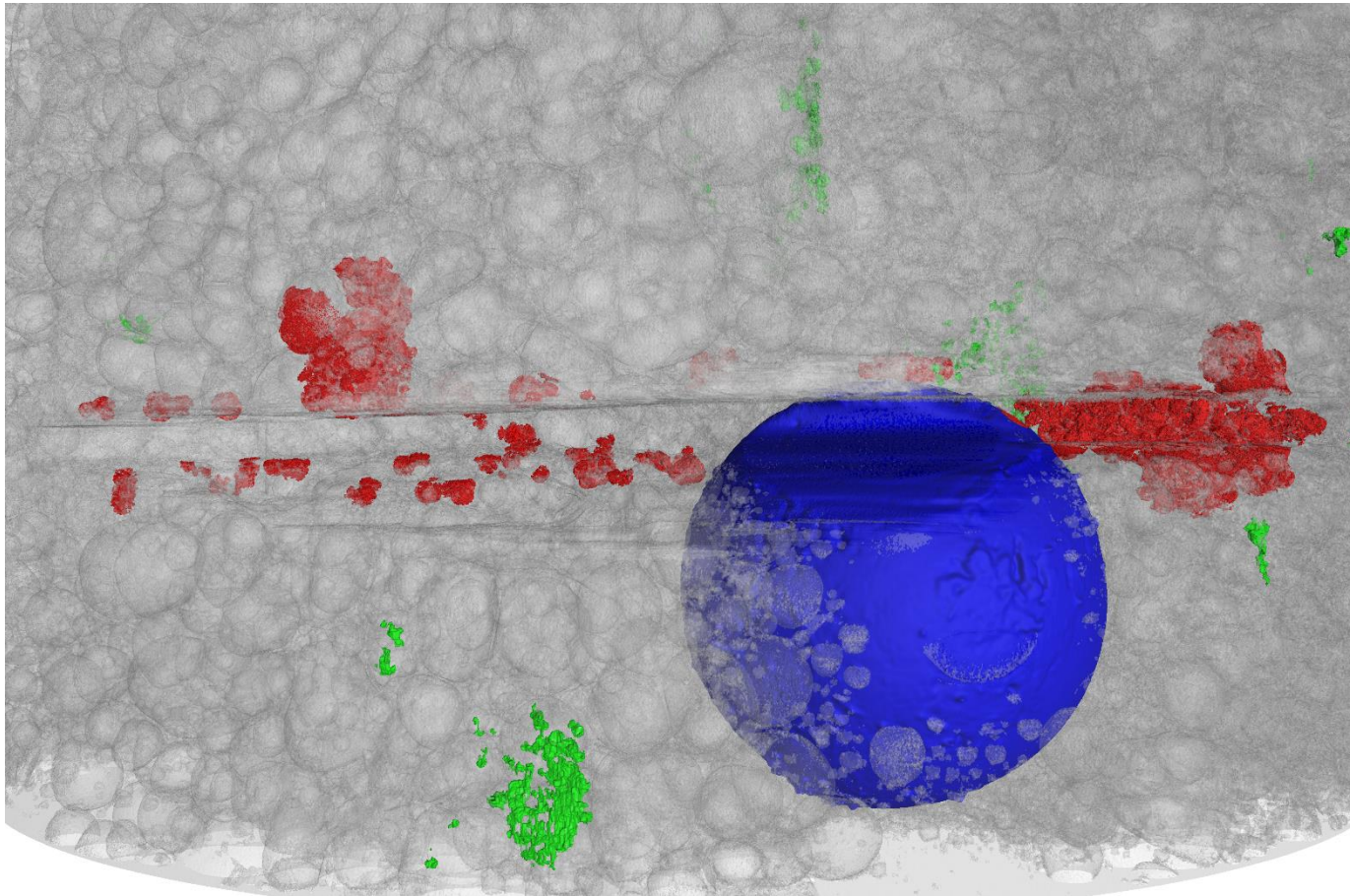


Fig. 12: Powder aggregation adjacent to the partial cut of a sphere inside the cylinder obtained from CT scan

