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Granular templating: effects of boundary structure on particle packings under simultaneous shear and compression[1] BRUNO HANCOCK, Pfizer Inc., Groton, Connecticut, USA, MEENAKSHI DUTT, University of Cambridge, CRAIG BENTHAM, Pfizer Ltd., Sandwich, Kent, UK, JAMES ELLIOTT, University of Cambridge — We present our findings on the effect of various confining substrates, both crystalline and amorphous, on spherical granular particles, packed under gravity followed by the simultaneous application of shear and compressive strains. We show that a substrate templated with the BCC (100) plane, whose void and particle packing structures are identical, is most suitable for inducing crystallization mimicking the substrate structure. Our results for both templated substrates show the compressive strain dominating the shear strain.

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