

Abstract Submitted
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Densest columnar structures of hard spheres from sequential deposition¹ HO-KEI CHAN, Foams & Complex Systems, School of Physics, Trinity College Dublin, Ireland, ABERYSTWYTH UNIVERSITY COLLABORATION — The rich variety of densest columnar structures of identical hard spheres inside a cylinder can surprisingly be constructed from a simple and computationally fast sequential deposition of cylinder-touching spheres, if the cylinder-to-sphere diameter ratio D is within $[1, 2.7013]$. This provides a direction for theoretically deriving all these densest structures and for constructing such densest packings with nano-, micro-, colloidal or charged particles, which all self-assemble like hard spheres [*Rapid Communication*, Physical Review E (in press)].

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