

Size segregation of irregular granular materials captured by time-resolved 3D imaging

Parmesh Gajjar^{1,*}, Chris G. Johnson², James Carr¹, Kevin Chrispeels³, J. M. N. T. Gray², and Philip. J. Withers^{1,4,+}

¹Henry Moseley X-ray Imaging Facility, Department of Materials Science, The University of Manchester, Manchester, M13 9PL, UK

²Department of Mathematics, The University of Manchester, Manchester, M13 9PL, UK

³Thermofisher Scientific, 39 rue d'Armagnac, 33000 Bordeaux, France

⁴Henry Royce Institute, The University of Manchester, Manchester, M13 9PL, UK

*parmesh.gajjar@alumni.manchester.ac.uk

+p.j.withers@manchester.ac.uk

SUPPLEMENTARY MATERIALS

The supplementary material consists of two videos:

- **Video V1:** Full temporal evolution of the sheared nut mixture, with nuts coloured according to their size. The left hand side shows the full nut shape, with the right hand side showing a point sphere representation of each nut.
- **Video V2:** Dynamics of five selected Brazil nuts, coloured according the orientation of their major axis of inertia relative to the vertical laboratory axis. The left hand size is a visualisation of the nuts, with the right hand side a point sphere representation using the same colours.