

\*\*\* Dataset of Jammed Deformable Hydrogel Suspensions (JDHS) – Rheology Measurements and Microscopy Images\*\*\*

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\*\*\*General Introduction\*\*\*

The following dataset has:

1. An Excel (spreadsheet) file containing the oscillatory strain amplitude sweep measurements of representative jammed deformable hydrogel suspensions (JDHS).
2. Optical microscopy images at different magnifications of the JDHS in question.

The data is made available primarily through the doctoral dissertation of the corresponding author (Anand Raja). A summary of the JDHS, along with the experimental results, is available on the first spreadsheet. This is consistent with the labels and information provided in the doctoral

\*\*\*Methodological Information\*\*\*

- The rheology data was obtained using a stress controlled TA Instruments - Discovery Hybrid Rheometer 3. The measurements were carried out using a sandblasted plate on plate setup.

- The optical microscopy images were captured using a Nikon Eclipse E600 POL optical microscope, equipped with a Nikon DS-Ri1 camera.

### \*\*\*Data Specific Information\*\*\*

#### Nomenclature:

1. H-Alginate / H-Alg: Hydrogen Bonded Alginate
2. Ca-Alginate / Ca – Alg: Calcium crosslinked alginate
3. Ketchup: Tomato ketchup
4. EPS: Extracellular Polymeric Substances
5. GDL: Alginate – Gluconic Acid Hydrogels.
  - a. Monolithic: Continuous sample
  - b. Foam: Hydrogel with voids
  - c. Mosaic: Fragmented hydrogel particles
  - d. Granular: Monolithic sample turned into a JDHS through high shear mixing.

Excel Summary Sheet: Summarises the JDHS in question, alongside the solids concentration (in % w/w) and experiment number (1-3). The strain amplitude values are dimensionless (m/m). The storage and loss moduli are represented in Pa.

#### Naming convention of the microscopy images:

“JDHS Name \_\_ Magnification \_\_ Numerical Aperture \_\_ Camera Exposure Time \_\_ Contrast Setting \_\_ White Balance.tif”

Example: H-Alg\_\_5x\_\_15 NA\_\_1ms\_\_Dynamic Contrast\_\_Auto WB.tif

Images of a graded scale bar (0.01 mm and 0.1 mm) are also provided for the purposes of calibration.

### \*\*\*Sharing and Access Information\*\*\*

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