# Summary of the Research Data supporting "Modeling the Cholesteric Pitch of Apolar Cellulose Nanocrystal Suspensions Using a Chiral Hard-Bundle Model"

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(Dated: 8 December 2021)

Original publication: The Journal of Chemical Physics (*in press*)
DOI: 10.1063/5.0076123.

The Research Data described in this document and that support the findings of the cited publication are openly available from the University of Cambridge data repository *via* the DOI: 10.17863/CAM.53675 (reference number 1203141).

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## A. General description

This research dataset is available for free at the University of Cambridge data repository and accessible from this link: `http://dx.doi.org/10.17863/CAM.53665`.

The dataset is compressed into ".zip" files grouped by the corresponding Figure they have been used in. All spectra were exported in format that are accessible with free software, and sometimes in additional format that require a license (Matlab).

## B. List of extensions used

| Extensions | type | Required software |
|---|---|---|
| .zip | archive | none |
| .jpg | image | none |
| .png | image | none |
| .eps | image | none |
| .pdf | text & image | none |
| .key | slides | Keynote |
| .dat | ASCII | none |
| .py | code | Python |
| .txt | ASCII | none |

TABLE I. List of extensions used.

## C. List of available files

TABLE II: List of available files.

| **Folder** | **subfolder** | **sub-subfolder** | **filename.ext** |
|---|---|---|---|
| Figure01 | | | Figure01.jpg |
| | | | Figure01a.jpg |
| | | | Figure01b.jpg |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | Figure01.pdf |
| | | | SplinterSketch.png |
| Figure02 | | | ModelandExperiments.jpg |
| | | | sketches.key |
| | | | sketches.pdf |
| Figure03 | | | experimental_data.dat |
| | | | isotropic_nematic_transition.dat |
| | | | surfactant_ratios.dat |
| | | | Figure03_eta_loglog.png |
| | | | Figure03_eta.png |
| | | | Figure03_inv.png |
| | | | Figure03_loglog.png |
| | | | Figure03.png |
| | | | pvsc.png |
| | | | graphPitchTrends.py |
| Figure03 | PitchTrends | | pitch_vs_pf$_D$6.3*nm.dat* |
| | | | pitch_vs_pf_D8.3nm.dat |
| | | | pitch_vs_pf$_D$9.3*nm.dat* |
| | | | pitch_vs_pf$_D$10.3*nm.dat* |
| Figure04 | | | experimental_data.dat |
| | | | surfactant_ratios.dat |
| | | | Sketches.pdf |
| | | | pitch_uncertainty$_e$*ta.png* |
| | | | pitch_uncertainty.png |
| | | | pvsp.png |
| | | | graphPitchTrends.py |
| Figure04 | Sketches | | 375.jpg |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | 500.jpg |
| | | | 625.jpg |
| | | | 750.jpg |
| Figure04 | PitchTrends | | pitch_vs_pf_p375nm.dat |
| | | | pitch_vs_pf_p450nm.dat |
| | | | pitch_vs_pf_p475nm.dat |
| | | | pitch_vs_pf_p500nm.dat |
| | | | pitch_vs_pf_p525nm.dat |
| | | | pitch_vs_pf_p550nm.dat |
| | | | pitch_vs_pf_p625nm.dat |
| | | | pitch_vs_pf_p700nm.dat |
| | | | pitch_vs_pf_p750nm.dat |
| Figure05 | Ldependence | | isotropic_nematic_transition.dat |
| | | | particle_volumes.dat |
| | | | shapes.dat |
| | | | surfactant_ratios.dat |
| | | | Ldependence.png |
| | | | graphPitchTrends.py |
| Figure05 | Ldependence | PitchTrends | pitch_vs_pf_p-0.4.dat |
| | | | pitch_vs_pf_p-0.3.dat |
| | | | pitch_vs_pf_p-0.2.dat |
| | | | pitch_vs_pf_p-0.1.dat |
| | | | pitch_vs_pf_p0.0.dat |
| | | | pitch_vs_pf_p0.1.dat |
| | | | pitch_vs_pf_p0.2.dat |
| | | | pitch_vs_pf_p0.3.dat |
| | | | pitch_vs_pf_p0.4.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| Figure05 | wdependence | | isotropic_nematic_transition.dat |
| | | | particle_volumes.dat |
| | | | shapes.dat |
| | | | surfactant_ratios.dat |
| | | | wdependence.png |
| | | | graphPitchTrends.py |
| Figure05 | wdependence | PitchTrends | pitch_vs_pf_p-0.4.dat |
| | | | pitch_vs_pf_p-0.3.dat |
| | | | pitch_vs_pf_p-0.2.dat |
| | | | pitch_vs_pf_p-0.1.dat |
| | | | pitch_vs_pf_p0.0.dat |
| | | | pitch_vs_pf_p0.1.dat |
| | | | pitch_vs_pf_p0.2.dat |
| | | | pitch_vs_pf_p0.3.dat |
| | | | pitch_vs_pf_p0.4.dat |
| Figure05 | shapedependence | | isotropic_nematic_transition.dat |
| | | | particle$_v$*olumes.dat* |
| | | | shapes.dat |
| | | | surfactant$_r$*atios.dat* |
| | | | As.png |
| | | | c0s.png |
| | | | shapedependence$_i$*nv.png* |
| | | | shapedependence.png |
| | | | graphPitchTrends.py |
| Figure05 | shapedependence | PitchTrends | pitch_vs_pf_p-0.4.dat |
| | | | pitch_vs_pf_p-0.3.dat |
| | | | pitch_vs_pf_p-0.2.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | pitch_vs_pf_p-0.1.dat |
| | | | pitch_vs_pf_p0.0.dat |
| | | | pitch_vs_pf_p0.1.dat |
| | | | pitch_vs_pf_p0.2.dat |
| | | | pitch_vs_pf_p0.3.dat |
| | | | pitch_vs_pf_p0.4.dat |
| Figure06-07 | | | compositions.dat |
| | | | missing.dat |
| | | | monodisperse_pitch.dat |
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| Figure06-07 | allPs_x0.5 | | compositions.dat |
| | | | monodisperse_pitch.dat |
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| | | | p_vs_delta_eta.png |
| | | | p_vs_delta.png |
| | | | reference copy.png |
| | | | graphPitchTrends.py |
| Figure06-07 | allPs_x0.5 | PitchTrends | pitch_vs_pf_d0.1.dat |
| | | | pitch_vs_pf_d0.2.dat |
| | | | pitch_vs_pf_d0.3.dat |
| | | | pitch_vs_pf_d0.4.dat |
| Figure06-07 | allPs_y0.5 | | compositions.dat |
| | | | monodisperse_pitch.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| | | | p_vs_delta_eta.png |
| | | | p_vs_delta-1.png |
| | | | reference copy.png |
| | | | graphPitchTrends.py |
| Figure06-07 | allPs_y0.5 | PitchTrends | pitch_vs_pf_d0.1.dat |
| | | | pitch_vs_pf_d0.2.dat |
| | | | pitch_vs_pf_d0.3.dat |
| | | | pitch_vs_pf_d0.4.dat |
| Figure06-07 | p0.0 | | monodisperse_pitch.dat |
| | | | monodisperse_surfactant$_{r}atio.dat$ |
| | | | particle_volumes.dat |
| | | | surfactant$_{r}atios.dat$ |
| | | | p0.0_eta.png |
| | | | p0.0.png |
| | | | graphPitchTrends.py |
| Figure06-07 | p0.0 | PitchTrends | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | p0.1 | | monodisperse_pitch.dat |
| | | | monodisperse_surfactant$_{r}atio.dat$ |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | particle_volumes.dat |
| | | | surfactant$_{r}atios.dat$ |
| | | | p0.1_eta.png |
| | | | p0.1.png |
| | | | graphPitchTrends.py |
| Figure06-07 | p0.1 | PitchTrends | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | p0.2 | | monodisperse$_{p}itch.dat$ |
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| | | | p0.2_eta.png |
| | | | p0.2.png |
| | | | graphPitchTrends.py |
| Figure06-07 | p0.2 | PitchTrends | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | p0.3 | | monodisperse_pitch.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| | | | p0.3_eta.png |
| | | | p0.3.png |
| | | | graphPitchTrends.py |
| Figure06-07 | p0.3 | PitchTrends | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | p0.4 | | monodisperse_pitch.dat |
| | | | monodisperse_surfactant_ratio.dat |
| | | | particle_volumes.dat |
| | | | surfactant_ratios.dat |
| | | | p0.4_eta.png |
| | | | p0.4.png |
| | | | graphPitchTrends.py |
| Figure06-07 | p0.4 | PitchTrends | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| Figure06-07 | PitchTrends | p0.0 | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | PitchTrends | p0.1 | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | PitchTrends | p0.2 | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | PitchTrends | p0.3 | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | PitchTrends | p0.4 | pitch_vs_pf_y0.0.dat |
| | | | pitch_vs_pf_y0.2.dat |
| | | | pitch_vs_pf_y0.4.dat |
| | | | pitch_vs_pf_y0.5.dat |
| | | | pitch_vs_pf_y0.6.dat |
| | | | pitch_vs_pf_y0.8.dat |
| | | | pitch_vs_pf_y1.0.dat |
| Figure06-07 | PitchTrends_x0.5 | p0.0 | pitch_vs_pf_y0.5.dat |
| Figure06-07 | PitchTrends_x0.5 | p0.1 | pitch_vs_pf_y0.5.dat |
| Figure06-07 | PitchTrends_x0.5 | p0.2 | pitch_vs_pf_y0.5.dat |
| Figure06-07 | PitchTrends_x0.5 | p0.3 | pitch_vs_pf_y0.5.dat |
| Figure06-07 | PitchTrends_x0.5 | p0.4 | pitch_vs_pf_y0.5.dat |
| Figure08 | | | avgnx.dat |
| | | | avgny.dat |
| | | | avgnz.dat |
| | | | avgrhoz.dat |
| | | | Figure01.eps |
| | | | Figure03.png |
| | | | graphNematicDirector.py |
| Figure09 | | | eos.dat |
| | | | pitches.dat |
| | | | theory.dat |
| | | | Figure01.eps |
| | | | Figure01.png |
| | | | MCSimulations.png |
| | | | graphTheoryandSimulations.py |

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**TABLE II – continued from previous page**

| Folder | subfolder | sub-subfolder | filename.ext |
|---|---|---|---|
| tables | | | shapes_L.dat |
| | | | shapes_shape.dat |
| | | | shapes_w.dat |
| | | | table_script.txt |