PDM research project PDMT1/23/004

A Data Management Plan created using DMPonline.be

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Template: KU Leuven BOF-IOF

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Project abstract:

Liquid-fluid interface provides an ideal platform for assembling colloids into 2D layers with stimuli-responsive and/or structural properties, whilst also structuring all-liquid multiphase materials into complex 3D objects. the project sets out to localise particles at the interface with much higher concentration via novel processing for the first time, enabling non-equilibrium kinetically trapped stabilised states. This will impart enhanced interfacial and bulk mechanical properties, while offering a unique and material-efficient route to structure otherwise all-liquid materials, either as a final product or an intermediate.

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PDM research project PDMT1/23/004

Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
		Indicate: ***N****(ew data) or* ***E****(xisting data)*	Indicate: **D**(igital) or **P**(hysical)	Indicate: **A**udiovisual **I**mages **S**ound **N**umerical **T**extual **M**odel **SO**ftware Other (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
	Surface pressure data	N	D	N	.txt	<1GB	
	Spectroscopic data (nanocellulose)	N	D	N	.csv, .jdx, .vms	<100 GB	
	Scattering data	N	D	N	.edf, .hdf5, .dat	<1 TB	
	Imaging data	N	D	N	.tiff, .hdf5	<1 TB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

N/A

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- No

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- No

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

Experimental notes will be kept in an on-site RSpace ELN server (https://rspace.gbiomed.kuleuven.be), and all data will be linked to the appropriate notes used to generate the data using unique identifiers of the notes. Datatype dependent metadata will also be extracted where possible to the metadata catalogue of the storage platform (ManGO) to improve findability.

Will a metadata standard be used to make it easier to find and reuse the data?
If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- No

Data will be linked at minimum to the experimental notes regarding the data collection method, the associated technique and the research project. Additional, technique dependent metadata about the experimental conditions will be extracted where possible.

Published data in RDR will conform to the datacite metadata standard.

Data Storage & Back-up during the Research Project

Where will the data be stored?

- Other (specify below)
- ManGO

Research data will be stored in the ManGO platform. Experimental notes will be stored in an on-site RSpace instance (https://rspace.gbiomed.kuleuven.be).

How will the data be backed up?

- Standard back-up provided by KU Leuven ICTS for my storage solution
- Personal back-ups I make (specify below)

In addition to the KUL back up solutions, monthly back up of the ManGO data to the KUL Archive storage will be performed as a last-resort method of data recovery.

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

All data access is controlled by KUL central login with MFA. Within ManGO, access to the data specific to this project is limited to the people working on the project.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

ManGO: 35 EUR
RSpace: 180 EUR
These costs will be covered by KUL SusMat.

Data Preservation after the end of the Research Project

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- All data will be preserved for 10 years according to KU Leuven RDM policy

Where will these data be archived (stored and curated for the long-term)?

- Large Volume Storage (longterm for large volumes)
- KU Leuven RDR

Data related to publications will be published in RDR. All data (including unpublished) will be retained in LVS.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

No costs in relation to published data (RDR). 950 EUR for archive storage (based on 1 Tb).
Costs will be covered by KUL-SusMat.

Data Sharing and Reuse

Will the data (or part of the data) be made available for reuse after/during the project?
Please explain per dataset or data type which data will be made available.

- Yes, as open data

If access is restricted, please specify who will be able to access the data and under what conditions.

N/A

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Please explain per dataset or data type where appropriate.

- No

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- KU Leuven RDR (Research Data Repository)

When will the data be made available?

- Upon publication of research results

Which data usage licenses are you going to provide?

If none, please explain why.

- CC-BY 4.0 (data)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- Yes, a PID will be added upon deposit in a data repository

What are the expected costs for data sharing? How will these costs be covered?

None - shared data is not expected to breach the free allowance of RDR.

Responsibilities

Who will manage data documentation and metadata during the research project?

Kai Yu (kai.yu@kuleuven.be)

Who will manage data storage and backup during the research project?

Kai Yu will ensure that the data is stored appropriately. Samuel Eyley will ensure monthly offline back ups are performed, and provide support for tools for metadata extraction.

Who will manage data preservation and sharing?

Data preservation will be managed by Samuel Eyley and Wim Thielemans. Data sharing will be managed by Kai Yu, Samuel Eyley and Wim Thielemans.

Who will update and implement this DMP?

Samuel Eyley, Wim Thielemans and Kai Yu.