CONTROLE VAN VERBETERDE MICROSTRUCTUREN IN ZACHTE MATERIE DOOR HET FUNDAMENTELE BEGRIP VAN FORMATIE TIJDSCHAALCOMPETITIE (CONCIOUS)

A Data Management Plan created using DMPonline.be

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Template: KU Leuven BOF-IOF

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Project abstract:
In this project, gaining fundamental understanding of the **competition** between **internal time scales** of soft matter, time scales associated with **flow,** and time scales associated with the **fixation of the generated microstructure** will allow to *a priori* tailor **anisotropy** in a wide range of materials in a rational manner. **Cleverly manipulating** this nature inspired competition will provide materials of homogeneous composition but various degrees of internal microstructural anisotropy, leading to vast improvement in their properties purely by **clever processing without changing their composition**. Utilizing a **coherent scientific approach,** the fundamental study of a wide range of time scales in polymeric, colloidal and generally multiphasic systems, together with varied dynamic (weak to strong) interactions for anisotropic microstructure fixation, will be achieved through **combined rheological and structural investigations,** including the **further development of sophisticated experimental techniques.**

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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.

Data set 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 <100 GB <1TB <5TB >5TB NA
Rheometer output data	Exported data from the commercial rheometers, exported to Excel.	N	D	N	.csv	<100 GB
Scanned images of archival documents	digitalization of lab-books which contain information on	N	D	O	.pdf	<100 GB

	the experimental setup, conduction, and results as sample compositions, exp. settings, data visualisation , etc.					
computercode and chirp functions	Matlab files to analyse the raw data and to generate novel wave functions to analyse samples in the C1 project fed into spectralanalyzer	N	D	E	other	<100 GB
python codes	Python codes, programm	N	D	SO	.py	<100 GB

	ed to implement new chirp algorithms as open source					
text data	general text data (draft manuscripts and accepted manuscripts (with figures and tables); Presentations ; Minutes of meetings	N	D	T	.pdf	<100 GB

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:

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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).

The experimental designs, instrument settings, general and specific observations will be noted in a (digital) lab journal.
For the generated codes, specific readme files will be generated in text form, specifiying the usuage and detail of the codes. Similarely, for the single simulations, readme files with the specific input parameters will be generated.

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 STORAGE & BACK-UP DURING THE RESEARCH PROJECT

Where will the data be stored?

- OneDrive (KU Leuven)

- Other (specify below)

Data will be stored during 10 years on an external drives, dedicated to this project, as well as on OneDrive

How will the data be backed up?

- Other (specify below)

In addition to the automatic back-up procedures for the data stored on OneDrive, a second back-up will be done on a two NAS located at the physics department as well as department of chemical engineering KU Leuven.

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

Daily storage drives have at the moment a capacity of 2 TB. Back-up drives have currently sufficient capacity for this additional data, the secondary backup drives (NAS) are monitored and capacity is adjusted if necessary.

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

External data storage as well as NAS data will be encrypted. Data that will be stored on OneDrive is trusted to be in the university's secure environment for private data

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

External harddrives eventually to be purchased, NAS maintanance is carried via general expenses of the SMaRT research group.

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)

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

Expected costs are 2000 EUR, which will be covered from reserve funds

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.

-

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.

- No

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

No costs are expected for the use of RDR

RESPONSIBILITIES

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

Researchers working on the project

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

Researchers and PIs working on the project

Who will manage data preservation and sharing?

PIs

Who will update and implement this DMP?

The PIs bear the end responsibility of updating & implementing this DMP