DATA MANAGEMENT PLAN

# 1. Data description and collection or re-use of existing data

## How will new data be collected or produced and/or how will existing data be re-used?

Within the scope of the project multiple types of qualitative and quantitative data will be generated. It will be related

to microscopic images, light scattering, electrochemical, electronic, mechanical and physico-chemical measurements,

SEM/AFM/TEM micrographs, rheometry, and molecular weight studies, copolymer designs and technology procedures.

Raw data will be analyzed and expressed as graphs, tables and annotated images, some of which are expected to be

published. Raw data will be stored in an organized manner by all research team members and sufficient care will be

taken to prevent any data loss. In essence, all data processed in this project will be generated by the research activities

of the team members within the scope of activities planned and described in the research plan.

Pozyskiwane lub opracowywane dane (np. rodzaj, format, ilość)

Data generated will be in various formats and sizes of databases, most of which will be accessible using common

software allowing easy access and long-term validity during and after the project, thus facilitating data sharing.

Micrographs in .jpg or .tiff format. The size of a single data set depends on the measurement approach and is typically

30 MB. Around 1500 various images are expected to be taken within the proposed project.

## What data (for example the types, formats, and volumes) will be collected or produced?

# 2. Documentation and data quality

## What metadata and documentation (for example methodology or data collection and way of organising data) will accompany data?

Most data will be collected in a highly automated manner by the equipment which in some cases will include additional

metadata. Data files will be labeled appropriately and placed in clearly labeled folders. Gdańsk Tech operates a

dedicated platform, MOST Wiedzy, which contains an Open Research Data Catalog (commonly named Bridge of Data) ,

where part of the collected in this project data will be made available free of charge to the scientific community,

entrepreneurs and the public. The available research data will be described by attributes developed by dedicated,

experienced scientific teams. This metadata will be in line with widely recognized metadata standards and schemas for

effective data dissemination as will allow other external computer systems, databases or web services to interpret the

collected data. Metadata descriptions will be stored in JSON-LD format. Contributor will be identified and authorized

Stosowane środki kontroli jakości danych

Standard protocols will be optimized and used to collect data to ensure reliability and consistency. All experiments will

incorporate appropriate positive and negative controls to ensure validity. Whenever possible experimental setups

Data will be discussed in weekly lab meetings to ensure correct procedures. Data will be cataloged in a way to fulfill

FAIR standards requirements.

## What data quality control measures will be used?

involving internal controls will be preferred. Project staff will be trained in techniques they use to ensure quality data.

# 3. Storage and backup during the research process

## How will data and metadata be stored and backed up during the research process?

Data will be kept at secured hard drives and on-line clouds (Microsoft OneDrive, A1 for faculty license) of all members

of the research team.

Data backups on hard drives will be done weekly.

Sposób zapewnienia bezpieczeństwa danych oraz ochrony danych wrażliwych podczas badań

recovery will be possible thanks to backup procedures. Data storage will be kept in accordance with the policy of the

Gdańsk Tech, preventing access without the authorization.

## How will data security and protection of sensitive data be taken care of during the research?

No medical, personal or otherwise sensitive data is expected to be generated during the proposed project. Data

# 4. Legal requirements, codes of conduct

## If personal data are processed, how will compliance with legislation on personal data and on data security be ensured?

## How will other legal issues, such as intelectual property rights and ownership, be managed? What legislation is applicable?

The ownership and management of any intellectual property relating to the Project remain in the rights of the Gdansk

University of Technology and the research team members accordingly to the Polish law and institutional regulations

(Resolution of the Senate of the Gdańsk University of Technology No. 117/2021/XXV of 19 May 2021

https://link.pg.edu.pl/GdańskTech\_intprop). Whenever possible, dissemination of the deliverables of the project with

be carried out using open-access channels, e.g. under Creative Commons licenses. Whenever possible, dissemination of

the project's deliverables will be carried out using open-access channels, e.g., under CC BY or CC0 licenses. Metadata

descriptions for these datasets will always be available without any restrictions (CC0). No embargo or other restrictions

are necessary.

# 5. Data sharing and long-term preservation

## How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?

Selected data will be uploaded as soon as possible (not later than after acceptance of the manuscript for publication)

and kept at open repository MOST Wiedzy Open Research Data Catalog. There are no restrictions regarding data

sharing and no sensitive data will be published. Majority of scientific journals do not require the direct sharing of raw

The data will be stored in a dedicated MOST Wiedzy Open Research Data Catalog (described in detail in 2.1) repository,

which is CoreTrustSeal certified. This certificate confirms the repository's trustworthiness and sustainability. Data

deposited there will be automatically categorized for long-term storage without an expiration date. The data to be

least 10 years after the project is finished and access to them will be possible only with the PI consent.

Metody lub narzędzia programowe umożliwiające dostęp do danych i korzystanie z danych

Most of the data will be produced in standard ASCII formats and will require no further transformation. Data will be

## How will data for preservation be selected, and where will data be preserved long-term (for example a data repository or archive)?

data. However, selected datasets published in a processed way in scientific journals, will be preserved according to the

rules imposed by the specific journal (e.g. for 2 or 5 years).

Sposób wyboru danych przeznaczonych do przechowania oraz miejsce długotrwałego przechowywania danych (np.

repozytorium lub archiwum danych)

deposited in the repository will be chosen on the basis of its scientific quality and exemplarity.

Moreover, all data not selected for sharing and preservation in the MOST Wiedzy repository will also be stored for at

stored using the dedicated repository MOST Wiedzy Open Research Data Catalogue.

Sposób zapewniający stosowanie unikalnego i trwałego identyfikatora (np. cyfrowego identyfikatora obiektu (DOI)) dla

każdego zestawu danych

The MOST Wiedzy Open Research Data Catalogue repository (described in detail in 2.1) supports obtaining unique DOI

## What methods or software tools will be needed to access and use the data?

## How will the application of a unique and persistent identifier (such us a Digital Object Identifier (DOI)) to each data set be ensured?

numbers for each of the uploaded datasets. Data stored within this project will be linked with such unique DOI

# 6. Data management responsibilities and resources

## Who (for example role, position, and institution) will be responsible for data management (i.e the data steward)?

Open Science Competence Center which is a constituent part of the Gdańsk Tech will be responsible for Data

Management Plan for this Project and for quality of metadata descriptions of datasets in the repository.Project PI (Dr.

Khodadadiyazdi) will be responsible for the procedures of assessment and overall data quality.

Środki (np. finansowe i czasowe) przeznaczone do zarządzania danymi i zapewnienia możliwości odnalezienia, dostępu,

interoperacyjności i ponownego wykorzystania danychMohsen Khodadadiyazdi, Politechnika Gdańska 635313

No specific allocation within the project for FAIR enforcement is planned. This is because the Gdańsk Tech already

operates a platform, the MOST Wiedzy Open Research Data Catalog (described in detail in 2.1) already implements

these requirements. As the platform is available free to the employees of the Gdańsk Tech, it will be utilized at no

additional cost. Special care will be taken to ensure that all data that is to be disseminated via this platform is checked

for integrity and errors. This process will be the responsibility of each of the researchers. In general, an average of 10%

## What resources (for example financial and time) will be dedicated to data management and ensuring the data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

of the time within the project will be dedicated to preparation of data summaries, presentations and data integrity

checks.Mohsen Khodadadiyazdi, Politechnika Gdańska 635313