

DATA MANAGEMENT PLAN – FORM FOR GDAŃSK UNIVERSITY OF TECHNOLOGY EMPLOYEES

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

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

New data will be generated during experiments and computer analysis. The experimental data will be collected by PC's directly connected to the instruments. Research procedures, measurement conditions and set-up will be collected by PI in a notebook.

During the project, existing data will also be used. The data to be used are available under specific restrictions, which we will follow in our project: CC-BY or CC-BY-NC.

1.2. What data (for example the kinds, formats, and volumes) will be collected or produced?

The following formats will be used during measurements and analysis: TIFF, xrdml, obj, csv, txt, xlsx.

All data selected for long-term archiving and sharing, will be in suitable open format like: txt, pdf, TIFF. We expect to have 8 GB of data in this formats.

2. Documentation and data quality

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

We will document more metadata than needed for reproducibility. We will use README files to document data origin and generation/processing steps

Description of our folder organisation :

Project_name/Exp_name/Date/sample_name.txt

Selected data will be facilitated by open research data repository, The MOST Wiedzy Open Research Catalog from Gdańsk University of Technology with metadata standards such as DataCite. Metadata description will be stored in JSON-LD format. Contributor will be identified and authorized by an ORCID number.

2.2. What data quality control measures will be used?

High care of sample characterization will be undertaken fulfilling the FAIR standards. Measuring data will be mostly created and collected automatically by measuring instruments, which will be calibrated according to manufacturer

requests.

Before performing tests the measuring unit will be tested using standard materials delivered by manufacturer. If needed, we will define a way to detect file or sample swaps, e.g. by measuring something independently.

3. Storage and backup during the research process

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

The created and collected data in raw form and as result of analysis or post-processing will be stored on Gdańsk Tech bussiness computer and shared workspace. All data derived from measuring units will be also stored on controlling PC's. The backup process will be done monthly and backup files will be stored on external hard drive and shared workspace. This work space will be run by dedicated specialists.

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

Only project members will have read access; only selected project members will be able to write data. Intranet disc space (array) governed by Gdańsk Tech and protected by passwords, will be used for sharing data with coworkers. The backup of all the data will be done during the whole project duration.

4. Legal requirements, codes of conduct

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

We don't need any consent for collected data because those are not personal.

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

The right to all generated data will be In line with university policy. The data and results will be published in open-access model under the one of the Creative Commons licenses.

5. Data sharing and long-term preservation

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

The data set will be stored in: MOST Wiedzy Open Research Catalog. We have contacted the repository. The dataset will be kept as long as technically possible. If needed the part of the data will be published in scientific journals which may also

require raw data publication.

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

The MOST Wiedzy Open Research Data Catalog will be the main data repository.

The data provided in the repository will fulfill FAIR requirements.

During the research team meetings will discuss the gathered data and will decide on what part of research data is worth being included in repository and whether it is self-explanatory in its current form or will need an additional processing.

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

The shared data will be in open formats, so there will be no need for specialized software by recipients.

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

The datasets provided in the repository will have the DOI assigned.

6. Data management responsibilities and resources

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

Open Science Competence Center (pg.edu.pl/openscience) - established by Gdańsk Tech will be responsible for DMP and data storage and dissemination. Project PI will be responsible for the procedures assessment and overall data quality.

6.2. 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)?

Each member of the research team is expected to follow the data acquisition and storage guidelines. PI will monitor the implementation of the data management plant and, if necessary, make corrections during the project. He will also provide necessary training to the involved students.