Plan Overview

A Data Management Plan created using DMPonline

Title: Advanced Chemical Sensors for Biodetection

Creator: Hasandara Sudangama

Affiliation: Cranfield University

Funder: Engineering and Physical Sciences Research Council (EPSRC)

Template: EPSRC Data Management Plan

Project abstract:

The aim of the PhD project is to address important technological gaps on the detection of bio-aerosols and
contribute enhancing safer, healthier, and more resilient working environments. The PhD research will
contribute in the Future Biodetection Technologies Research Hub activities funded through the UKRI
Expanding Excellence in England (E3) Scheme. Recent developments in sensor systems for rapid detection
of airborne biochemicals have demonstrated the capability of such systems to identify a range of organic
molecules and their precursors. The project will adapt and optimise the handheld Crim-Track sniffer sensor,
currently able to detect vapours of illicit substances, to a new detection scenario by offering a fast detection of
harmful chemicals in aerosol and bioaerosol samples with ppt sensitivity. Integration of the CRIM-TRACK
technology with other advanced detection tools will be also explored to inform the development of reliable and
easy to operate biodetection units.

ID: 183456

Start date: 22-04-2025

End date: 21-04-2028

Last modified: 02-10-2025

Advanced Chemical Sensors for Biodetection

Data Collection

What data will you collect or create?

The main set of data collected will be chemical analysis data, including numerical spreadsheets for UV-Vis, IR, TGA, DSC, NMR, Mass

How will the data be collected or created?

Primarily, the data will be collected from labratory experiments, being grouped by analysis method, date and experimental conditions.

Documentation and Metadata

What documentation and metadata will accompany the data?

Datasets will be accompanied by:
A description of experimental conditions
Date of data creation
Instrumentation and software used
Documentation of methodology and protocols

Ethics and Legal Compliance

How will you manage any ethical issues?

Currently, there are no known ethical concerns regarding the project. If any are found they are to be discussed with the relavent ethics boards.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

Copyright and Intellectual Property Rights will be recognised and any confidentiality agreements will be respected.

Storage and Backup

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

Primary storage of the data will be on a laptop's hard drive, with a copy of any data being stored on a one drive located in the university as well as backups being located on a teams channel.

How will you manage access and security?

The data is encrypted and access requires the use of a password as well as 2-factor authentication.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

Currently, it is unknown what data is of long-term value but experimental research data is to be to stored and maintained.

What is the long-term preservation plan for the dataset?

At the publication of a paper, a subset of the data that underpins the paper will be transferred.

Data Sharing

How will you share the data?

Data will be shared through the cranfield University

Are any restrictions on data sharing required?

Any commercially confidential data may be made available to others subject to a suitable legally enforceable non-disclosure agreement.

Responsibilities and Resources

Who will be responsible for data management?

Hasandara Sudangama, Cranfield University

What resources will you require to deliver your plan?

Appropriate access and training to required instrumentation as well as any corresponding analytical software:

FTIR

UV-Vis

NMR

TGA/DSC

HPLC

MS