

Data Management Plan

All data, and models generated from this project will be placed into the public domain and disseminated through our websites using an open licensing arrangement. We have been providing our data, tutorials, publications, and many other artifacts as open source materials. We regularly release these materials to our research lab website so that other researchers, undergraduate, and graduate students have access to these materials. We have successfully developed and supported many resources in this way over the years.

1. *The types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project*

The expected experimental data includes various micromachining processes such as microlithography, metal-deposition of sputtering and electroplating, etching, 3D printing, and molding. The microfabrication process data will be saved and be used as a troubleshooting or optimizing purpose. An excel sheet will be created for data comparison purposes.

Annual/final reports for NSF as well as graduate student's internal reports are expected.

This proposed work will generate substantial primary research data such as experimental measurements, analyzed data, metadata, and annual/final reports for NSF, and graduate student's internal reports.

Period of retention: all raw experimental data, simulation data, and analysis data, will be preserved for at least five years after the conclusion of the award or five years after public release, whichever is longer. We intend to preserve the data for as long as resources permit

2. *The standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies)*

The experimental results and analysis of the data can be the results, photographs, detailed measurements, plots, and other types of data. The principal investigator will manage student's job responsibility considering a change that would occur, e.g., a student leaves or graduate the institution or project.

3. *Policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements*

Summaries of the results, photographs, detailed measurements, plots, and other types of data will be shared among students and the principal investigators for their use. When copyright permits, any publications resulting from this work will be posted on the PI's research website (jkkim.org) where it can be freely and readily accessed via the internet. Dissertations resulting from student involvement in this project will also be made publicly and freely available through the library at the University of North Texas.

4. *Policies and provisions for re-use, re-distribution, and the production of derivatives*

The PI will have ultimate responsibility for policies and provisions for re-use, re-distribution, and the production of derivatives. However, the permission to re-use or re-distribute data sets will be granted contingent on appropriate attribution. The scientific data gathered, including the published papers, internal reports, and supporting files will be available to the public subject to the policy of the publisher of the articles. Researchers may purchase the original articles from the publisher but the supporting data will be available through the corresponding author of each paper.

5. *Plans for archiving data, samples, and other research products, and for the preservation of access to them.*

The collected data will be centrally archived with the PI's group for at least five years and will be made available to potential collaborators as needed. The raw data will be kept in the operation system (microscope images), and the backup storage for softcopy saving will be provided for every six months. The student and the PI will be responsible for the management and retention of research data.