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Collaborative Research: Fundamental Mechanisms of Microfluidic Traveling-Wave Electrophoresis

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Data Management Plan

I. Products of the Research

We anticipate that the proposed project may result in the following products: 1) data types – the experimental data will be composed primarily of video clips collected with the fluorescent microscope and current-time recordings. Additionally, the data will be collected using chronoamperometry and impedance. microfluidic devices, experimental methods for separation and reduction of zone dispersion, data processing methods, theoretical models; 2) experimental results – chemical separations; 3) device designs 4) device characterizations by surface profilometry, confocal fluorescence microscopy, scanning electron microscopy; 5) public disclosures – manuscripts, journal articles, conference proceedings, abstracts, posters, popular press articles, website postings; and 6) technology transfer – disclosures, patent applications.

II. Standards and Data Format

Generally, all data will be stored in the form of handwritten notes recorded in laboratory notebooks or in computer (electronic) files, as is standard practice for a university research laboratory. The choice of handwritten vs. computerized data is for the most part at the discretion of the researcher. For handwritten notebooks, individual researchers will keep all notebook content during their tenure at the university. Upon departure from the university, notebooks will be turned over to the PI for safe storage. All computerized data files, including those resulting from instrument outputs, as well as text, image, and video files from data processing software (.avi, .jpg, .tif, .pxp, .m, .mat, etc.) are regularly backed up and will be stored by the PI for the remainder of this career. Select video files of TWE separations will be made available through the Timperman Research Group website at Illinois and will be stored in *.avi format. The COMSOL files will be stored and shared as .mph files and COMSOL videos will be stored and shared as *.avi files.

III. Data Access and Sharing Policies

Public disclosure of data will be through written articles, reports, conference presentations, and similar avenues. As the principal means of disclosure, findings from this research project will be promptly submitted for publication in peer reviewed scientific journals (targeting both domestic and international audiences), after review to identify any patentable material, which would then be disclosed to the university prior to publication. A cataloged list (including author names, manuscript title, and source) of any disclosure will be publicly available on the PI's website. This listing will be updated promptly as information is disclosed. Publications and other public disclosures can also be found through web searches, or through a request to the researcher.

We do not expect the proposed project to result in data that itself needs to be shared with the public, however, access to the "final" data set will typically be available after the date of public disclosure and appropriate review of any issues pertaining to the protection of intellectual property. During the publication process, raw data may be submitted in the form of tables, graphs, figures, digital images, and video files as part of the supplementary materials sections of peer-reviewed journals. Under special circumstances, data may be released in response to a specific request.

Near the completion of the project, the COMSOL models will be made publically available on the PIs website.

IV. Data Re-Use, Re-Distribution, and Production of Derivatives Policies

Data which are broadly disseminated (peer-reviewed manuscripts) may be re-used with the permission of the appropriate copyright holder – typically the publisher of the journal article – except as allowed under the "fair use" doctrine in copyright law. Any data (device designs, graphics, videos, etc.) related to this project which are disseminated via PI communication (oral presentations, research group website) may be re-used, with proper citation and funding acknowledgment, after written permission from the PI is obtained.

V. Data Archiving

All final data, including hardcopy laboratory notebooks and electronic files are archived and maintained in the PI's group library. Located in the PIs office, the group library houses the comprehensive set of lab

notebooks, theses, and computerized data (primarily on CDs and DVDs) from all students and personnel. The notebooks and data are indexed chronologically from 1999 – present and are labeled with the primary author, project, and date. Physical materials and supplies are maintained for at least ten years or until they expire. Samples of a few notable devices are, labeled with personnel names, dates, and project name. All data are stored in locations that are protected from to the extent possible. Videos, electrochemical data, and the models will be made available on the Timperman Research Group website.