

**The A Team**

**Image Processing Tool for**

**Leidenfrost-Ratchet Systems**

**User Manual for Version 2.0 (Final Draft)**

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**1. Introduction**

This User Manual is a guide for the user how to use the Image Processing Tool.

The purpose of this document is to provide the users the Image Processing Tool with information on how to install, run, use, and possibly troubleshoot the provided software.

**2. Overview**

The users of this document will be researchers involved in tracking the motion of a droplet as it falls onto a ratcheted surface. The group of researchers who will use this software includes but is not limited to: Dr. Ok and Dr. Guo.

The purpose of the software is to efficiently track a drop of liquid and record measurements through images gathered from a high speed camera as the drop falls from an injection needle and travels along a ratchet surface.

The User Manual applies only to the Image Processing Tool version 2.0 supplied by the A-Team.

**3. Installation**

This section will inform the user what system requirement are needed and how to install the Image Processing Tool.

3.1 System Requirement

Before installing the Image Processing Tool please ensure that your system meets the following requirements.

- Windows 7 Professional or newer

- Excel 2007 or newer

3.2 System Installation

How-To-Install the Image Processing Tool using the CD-ROM:

1. Start Windows.
2. Insert the software CD.
3. Copy the file labeled ImageProcessingTool.exe on to the hard drive.
4. Create a Shortcut to the ImageProcessorTool.exe on your desktop by right clicking then sending to desktop as a shortcut.
5. Double click the shortcut to run the Program.

**4. Getting Started**

This section will inform the use how to get started using the Image Processing Tool.

4.1 Using the Software

1. Running Application:

Double click on the ImageProcessingTool.exe icon to open the application.

2. Navigating the User Interface:

There is a single form that will let the user Load the folder of images, enter the required inputs, calibrate the process images, finally run the complete data set. The program will generate a Excel file that will let the user save and renamed.

4.2 Step-By-Step Processing of Images

This section is how to use the Image Processing Tool step by step.

1. Load Image Folder:

Click on the Load button.

2. Select Image Folder:

Find and select the correct image folder, then click Okay button.

3. Enter Black/White Calibration:

Enter the default 32 Black/White calibration.

4. Enter Frame Rate

Enter the camera frame rate.

5. Enter the Base/Needle Height

Enter the correct height from the needle to the ratchet system.

6. Click Run

Click the run button.

7. View the data

Look through the data and determine if that is the correct output data.

4.3 Step-By-Step Calibrating of Images

This section is how to calibrate the Image Processing Tool step by step if provided with bad test data.