Instruktionen zur Installation des Micro-Manager Treibers für ProgRes® Mikroskopkameras

- 1. Java und die Version Mico\_manager 1.3.46 oder höher sollte vorher installiert werden.
- 2. Laden Sie sich die aktuellste Version des Jenoptik Micro-Manager Treibers für ProgRes® Mikroskopkameras auf unserer Internetseite herunter: <u>http://www.progres-camera.com/microscope-camera/downloads\_software.html</u>
- 3. Starten Sie die Installation des Jenoptik Micro-Manager Treibers für ProgRes® Mikroskopkameras per Doppelklick auf das Symbol und folgen Sie den Anweisungen mit "Next"

| Jenoptik ProgRes Micro-M | anager Driver Setup   |
|--------------------------|---|
| JENOPTIK                 | Welcome to the Jenoptik ProgRes<br>Micro-Manager Driver Setup Wizard<br>This wizard will guide you through the installation of Jenoptik<br>ProgRes Micro-Manager Driver.<br>It is recommended that you close all other applications<br>before starting Setup. This will make it possible to update<br>relevant system files without having to reboot your<br>computer.<br>Click Next to continue. |
|                          | Next > Cancel   |

4. Bestätigen Sie bitte die Lizenzvereinbarung.

| Diasco review the license    |                                      |   |
|------------------------------|--------------------------------------|---|
| Micro-Manager Driver.        | e terms before installing Jenop      | tik ProgRe  |
| e the rest of the agreement. |                                      |   |
| End User License Agr         | reement                              | <b>^</b>  |
|                              |                                      |   |
| Systems GmbH                 |                                      |   |
|                              |                                      |   |
| e                            | End User License Agr<br>Systems GmbH | ee the rest of the agreement.<br>End User License Agreement<br>Systems GmbH |

5. Wählen Sie bitte die zu installierenden Komponenten aus.

|   | Choose Components<br>Choose which features of Jenoptil<br>you want to install. | k ProgRes Micro-Manager Drive   |
|---|--|---|
| Check the components yo<br>install. Click Next to conti | ou want to install and uncheck the com<br>nue.                                 | ponents you don't want to   |
| Select components to ins                                | tall: USB Drivers<br>FireWire Camera Driver                                    | Description<br>Position your mouse<br>over a component to<br>see its description. |
| Space required: 27.8MB                                  |  |   |
| ullsoft Install System v2.42                            | 2  |   |

## 6. Bitte wählen Sie den Startmenü Ordner.

|  | Choose :                                   | Start Menu Folder                     | e Jenontik ProgRes          |
|--|--|---------------------------------------|-----------------------------|
| IOPTIK                                       | Micro-Ma                                   | nager Driver shortcuts.               | ie senopairrogres           |
| Select the Start Mer<br>can also enter a nar | nu folder in which y<br>ne to create a new | ou would like to create th<br>folder. | ne program's shortcuts. You |
| Jenoptik Micro-Mai                           | lager                                      |                                       |                             |
| Administrative Tool                          | 9  |                                       |                             |
| Games  | 58   |                                       |                             |
| ImageJ                                       |  |                                       |                             |
| IrfanView                                    |  |                                       | -                           |
| Jenoptik                                     |  |                                       | 1                           |
| Maintenance                                  |  |                                       |                             |
| Media Cybernetics                            |  |                                       |                             |
| Micro-Manager-1.3                            |  |                                       | -                           |
| Mozilla Firefox                              |  |                                       |                             |
| NeoSmart Technolo                            | gies                                       |                                       |                             |
| Do not create sh                             | ortcuts                                    |                                       |                             |
| oft Install System                           | 17 47                                      |                                       |                             |
| sore macon pystern                           | 15115                                      |                                       |                             |

7. Bestimmen Sie nun den Zielordner für die Installation des Jenoptik Micro-Manager Treibers für ProgRes® Mikroskopkameras

**Notiz:** Es wird empfohlen, den Jenoptik Micro-Manager Treiber für ProgRes® Mikroskopkameras im Hauptordner der Micro-Manager Software zu installieren.

| Choose Install Location<br>Choose the folder in which to install Jenoptik ProgRes<br>Micro-Manager Driver.<br>Select Micro-Manager 1.3 Installation folder.<br>Destination Folder<br>C:\<br>Space required: 11.8MB<br>Space available: 246.4GB<br>Nullsoft: Install System v2.42<br>< Back Install Cancel<br>Ordiner suchen<br>Select the folder to install Jenoptik ProgRes Micro-Manager Driver<br>In:<br>Micro-Manager-1.3<br>d drivers<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautofocus<br>Immautof  | 🚯 Jenoptik ProgRe | s Micro-Manager Drive                                 | er Setup   |                 |        |      | x  |
|---|-------------------|---|--|-----------------|--------|------|----|
| Select Micro-Manager 1.3 installation folder.   | JENOPTIK          | <b>Choose Inst</b> a<br>Choose the fo<br>Micro-Manage | Il Location<br>older in which to insta<br>er Driver. | ll Jenoptik Pro | gRes   |      |    |
| Destination Folder<br>C:\ Browse<br>Space required: 11.8MB<br>Space available: 246.43B<br>Nullsoft Install System v2.42<br>< Back Install Cancel<br>Concel<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>Concer<br>C | Select Micro-Mana | ger 1.3 installation folder                           | ŧ.   |                 |        |      |    |
| Destination Folder<br>C:\ Browse<br>Space required: 11.8MB<br>Space available: 246.4GB<br>Nullsoft Install System V2.42<br>< Back Install Cancel<br>Cordner suchen<br>Select the folder to install Jenoptik ProgRes Micro-Manager Driver<br>in:<br>Select the folder to install Jenoptik ProgRes Micro-Manager Driver<br>in:<br>Pipelings<br>Select the folder to install Jenoptik ProgRes Micro-Manager Driver<br>Pipelings<br>Pipelings<br>Pipelings<br>Pipelings<br>Pipelings<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs<br>PiperLogs  |                   |   |  |                 |        |      |    |
| C:\ Browse Space required: 11.8MB Space available: 246.4GB Nullsoft Install System V2.42       < Back Install Cancel         Install System V2.42         < Back Install Cancel         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:         Image: Concent of the folder to install Jenoptik ProgRes Micro-Manager Driver in:   | Destination Fold  | er  |  |                 |        |      |    |
| Space required: 11.8MB<br>Space available: 246.4GB<br>Nullsoft Install System v2.42   | C:\               |   |  | Br              | owse.  |      | ļ  |
| Select the folder to install Jenoptik ProgRes Micro-Manager Driver<br>in:<br>Micro-Manager-1.3<br>drivers<br>macros<br>mmautofocus<br>mmplugins<br>plugins<br>scripts<br>PerfLogs<br>PerfLogs<br>ProgramData<br>Programme<br>Recovery<br>System Volume Information  | C Orc             | dner suchen   | < Back   | Install         | ×      | Cano | el |
| <ul> <li>drivers</li> <li>macros</li> <li>mmutofocus</li> <li>mmplugins</li> <li>plugins</li> <li>scripts</li> <li>PerfLogs</li> <li>ProgramData</li> <li>Programme</li> <li>Recovery</li> <li>System Volume Information</li> </ul>   | Selec             | t the folder to install Jend                          | optik ProgRes Micro-M                                | lanager Drive   | r<br>A |      |    |
| <ul> <li>macros</li> <li>mmautofocus</li> <li>mmplugins</li> <li>plugins</li> <li>scripts</li> <li>PerfLogs</li> <li>ProgramData</li> <li>Programme</li> <li>Recovery</li> <li>System Volume Information</li> </ul>   |                   | drivers   | -1.5   |                 |        |      |    |
| <ul> <li>mmautofocus</li> <li>mmplugins</li> <li>plugins</li> <li>scripts</li> <li>PerfLogs</li> <li>ProgramData</li> <li>Programme</li> <li>Programme</li> <li>Recovery</li> <li>System Volume Information</li> </ul>  |                   | 🍌 macros  |  |                 |        |      |    |
| <ul> <li>Plugins</li> <li>plugins</li> <li>scripts</li> <li>PerfLogs</li> <li>ProgramData</li> <li>Programme</li> <li>Recovery</li> <li>System Volume Information</li> </ul>  |                   | mmautofocus   | 5  |                 |        |      |    |
| <ul> <li>scripts</li> <li>PerfLogs</li> <li>ProgramData</li> <li>Programme</li> <li>Programme</li> <li>Recovery</li> <li>System Volume Information</li> </ul>   |                   | mmplugins   |  | Ê               |        |      |    |
|   |                   | scripts   |  |                 |        |      |    |
| ProgramData     Programme     Bacovery     System Volume Information  |                   | PerfLogs  |  | E               |        |      |    |
| Programme     Page Programme     Page Programme     Page Programme     Page Programme     Page Programme  |                   | ProgramData   |  |                 |        |      |    |
| Recovery     System Volume Information  |                   | Programme   |  |                 |        |      |    |
| System Volume Information   |                   | Recovery  |  |                 |        |      |    |
|   |                   | System Volume   | Information  |                 |        |      |    |
| Neuen Ordner erstellen OK Abbrechen   | Neue              | en Ordner erstellen                                   | ОК   | Abbrechen       |        |      |    |

8. Nach Auswahl des Zielordners, folgen Sie bitte den folgenden Installations-Anweisungen.

|   | Choose Install Location   |
|---|---|
| ΝΟΡΤΙΚ  | Choose the folder in which to install Jenoptik ProgRes<br>Micro-Manager Driver. |
| Select Micro-Manag  | ger 1.3 installation folder.  |
|   |   |
|   |   |
|   |   |
| Destination Folde   | er  |
| Destination Folde<br>C: Wicro-Mana  | er<br>ager-1.3\ Browse  |
| Destination Folde<br>C:\Micro-Mana<br>Space required: 11  | er<br>ager-1.3\<br>L.8MB  |
| Destination Folde<br>C:\Micro-Mana<br>Space required: 11<br>Space available: 24                           | er<br>ager-1.3\<br>L.8MB<br>46.5GB  |
| Destination Folde<br>C: Wicro-Mana<br>Space required: 11<br>Space available: 24<br>ullsoft Install System | er<br>ager-1.3\ Browse<br>L.8MB<br>46.5GB                                       |

9. Die Installation wurde fertiggestellt

| Jenoptik ProgRes Micro-Ma | anager Driver Setup  |
|---------------------------|--|
| JENOPTIK                  | Completing the Jenoptik ProgRes<br>Micro-Manager Driver Setup Wizard<br>Jenoptik ProgRes Micro-Manager Driver has been installed on<br>your computer.<br>Click Finish to dose this wizard. |
|                           | < Back Finish Cancel   |

10. Nun können Sie Ihre ProgRes® Mikroskopkamera verbinden und das System wird den Treiber automatisch einrichten.

11. Nach der erfolgreichen Einrichtung des Micro-Manager Treibers für ProgRes® Mikroskopkameras sollten Sie die Micro-Manager Software mit der default Micro-Manager Startup-Konfigurationsdatei "MMConfig\_demo.cfg" starten.



12. Nun ist es erforderlich, Ihre persönliche Konfigurationsdatei zu kreieren, die den ProgRes® Mikroskopkamera-Treiber enthält. Bitte starten Sie den "Hardware Configuration Wizard" unter "Tools".

| 🛓 ImageJ           |                                  |               |           | <b> X</b> |
|--------------------|----------------------------------|---------------|-----------|-----------|
| File Edit Imag     | ge Process Analyze Plugi         | ns Window     | w Help    |           |
| DORO               |                                  | 1             |           | >>        |
| ImageJ 1.43j; Java | 1.6.0_10 [32-bit]; 360 commands; | 13 macros     |           |           |
|                    |                                  |               |           |           |
|                    |                                  |               |           |           |
| System: C:\Micro   | -Manager-1.3/MMConfig_demo.cfg   | 9             | l         |           |
| File Image5D Tool  | s Plugins Help                   | -             |           |           |
| 👔 Snap 💈           | Refresh GUI                      | iguration se  | ettings   | Save      |
| Live               | Rebuild GUI                      | IP            | Preset    |           |
| Acquire            |                                  | era           |           |           |
|                    | Script Panel                     | inel          | DAPI      |           |
| Multi-D Aci        | Device/Property Browser          | tPath         | Eyepiece  |           |
| Burst              |                                  | ctive         | 10X       |           |
| Refresh            | XY List                          | em            | Startup   |           |
| ROI                | Multi-Dimensional Acquisition    |               |           |           |
|                    | Burst Acquisition                | »: <b>+ -</b> | Edit Pres | + - Edit  |
| Full               | Split View                       |               |           | 1         |
| Auto               | Mouse Moves Stage                |               |           |           |
| Log hist.          | Hardware Configuration Wizard    | ]             |           |           |
| Max                | Pixel Size Calibration           |               |           |           |
| Avg                | Load Hardware Configuration      |               |           |           |
| Std Dev            | Save Configuration Settings      |               |           |           |
| camera             | Options                          | -0            |           |           |
| Auto-stretch       |                                  |               |           |           |
| Gamma 1            |                                  |               |           |           |
|                    |                                  | 7-0.00.00 10  |           |           |

13. Bitte wählen Sie "Create new configuration" und gehen Sie bitte zu "Next".

| Hardware Configuration Wizard   |  | × |
|---|--|---|
| Step 1 of 9: Select the configuration file  |  |   |
| Create new configuration     Modify or explore existing configuration   |  |   |
| C: \Micro-Manager-1.3/MMConfig_demo.cfg   | Browse   |   |
| The Configuration Wizard will help you configure the Micro-Manager set with your hardware setup. In this first step you decide whether to creat hardware configuration or modiy an existing one. Either way, you will b the name of the new or modified configuration file at the end of the Wiz or any time you quit the wizard. | oftware to work<br>e a new<br>e prompted for<br>zard sequence,<br>k Next |   |

14. Bitte gehen Sie zu Schritt 3 von 9 und dann gehen Sie bitte auf "Add..."

| Name            | Adapter/Library    | Description     | Add    |
|-----------------|--------------------|-----------------|--------|
| Iore            | MMCore/Default     | Core controller | Remove |
|                 |                    |                 |        |
|                 |                    |                 |        |
|                 |                    |                 |        |
|                 |                    |                 |        |
| enceforth to sp | pecify the device. |                 |        |
| enceforth to sp | pecify the device. |                 |        |

15. Wählen Sie den ProgRes® Mikroskopkamera-Treiber und bestätigen Sie das Hinzufügen mit "Add". Notiz: Nach dem Hinzufügen der ProgRes® Mikroskopkamera, haben Sie die Möglichkeit den Gerätenamen des Adapters zu ändern.

| Library             | Adapter               | Description                               |   | Add  |
|---------------------|-----------------------|---|---|------|
| ProgRes             | Jenoptik-ProgRes      | Jenoptik_ProgRes_Camera                   |   | Dene |
| PVCAM               | Camera-1              | Universal PVCAM interface - camera slot 1 |   | Done |
| PVCAM               | Camera-2              | Universal PVCAM interface - camera slot 2 |   |      |
| QCam                | QCamera               | QImaging universal camera adapter         |   |      |
| ScionCam            | ScionCam              | Scion 1394 Camera                         |   |      |
| Sensicam            | Sensicam              | PCO Sensicam camera adapter               |   |      |
| SimpleAF            | SimpleAF              | Exhaustive search AF - 100XImaging Inc.   |   |      |
| SimpleAutofocus     | SimpleAutofocus       | SimpleAutofocus Finder                    |   |      |
| SpectralLMM5        | LMM5-Hub              | Description N/A                           |   |      |
| SpectralLMM5        | LMM5-Shutter          | Description N/A                           |   |      |
| SpotCamera          | Spot                  | SpotCam                                   |   |      |
| SutterLambda        | Wheel-A               | Lambda 10 filter wheel A                  |   |      |
| SutterLambda        | Wheel-B               | Lambda 10 filter wheel B                  |   |      |
| SutterLambda        | Wheel-C               | Lambda 10 wheel C (10-3 only)             |   |      |
| SutterLambda        | Shutter-A             | Lambda 10 shutter A                       |   |      |
| SutterLambda        | Shutter-B             | Lambda 10 shutter B                       |   |      |
| SutterLambda        | Shutter-DG4           | DG4 shutter                               |   |      |
| SutterLambda        | Wheel-DG4             | DG4 filter changer                        |   |      |
| ThorlabsDCxxxx      | Thorlabs DC2010/DC2   | DC2010/DC2100 High Power LED Driver       |   |      |
| ThorlabsDCxxxx      | Thorlabs DC3100       | DC3100 FLIM LED Driver                    |   |      |
| ThorlabsDCxxxx      | Thorlabs DC4100       | DC4100 Four channel LED Driver            |   |      |
| ThorlabsFilterWheel | Thorlabs Filter Wheel | Thorlabs filter wheel                     | = |      |
| ThorlabsSC10        | SC10                  | ThorLabs SC10 shutter controller          |   |      |
| TIScam              | TIS_DCAM              | TIScam                                    |   |      |
| TwainCamera         | TwainCam              | Twain camera                              |   |      |
| Utilities           | Multi Shutter         | Combine multiple physical shutters into a |   |      |
| Utilities           | DA Shutter            | DA used as a shutter                      |   |      |
| Utilities           | DA Z Stage            | DA-controlled Z-stage                     | - |      |

16. Nach dem Hinzufügen der ProgRes® Mikroskopkamera-Gerätes, klicken Sie bitte den "Done"-Button um das "Add Device"-Fenster zu schließen.

| 5                   |                       |   |   |      |   | -                          |                                |                             |                  |
|---------------------|-----------------------|---|---|------|---|----------------------------|--------------------------------|-----------------------------|------------------|
| Library             | Adapter               | Description                               |   | Add  | S | Step 3 of 9: Add or remove | devices                        |                             |                  |
| ProgRes             | Jenoptik-ProgRes      | Jenoptik_ProgRes_Camera                   | - | Done |   | News                       | A dan bar di danam             | Description                 | Add              |
| PVCAM               | Camera-1              | Universal PVCAM interface - camera slot 1 |   | Done |   | Name                       | Adapter/Library                | Description                 | - Addini         |
| PVCAM               | Camera-2              | Universal PVCAM interface - camera slot 2 |   |      |   | Core                       | MMCore/Default                 | Core controller             | Remove           |
| QCam                | QCamera               | QImaging universal camera adapter         |   |      |   | Jenoptik-ProgRes           | Jenoptik-ProgRes/ProgRes       | Jenoptik_ProgRes_Camera     |                  |
| ScionCam            | ScionCam              | Scion 1394 Camera                         |   |      |   |                            |                                |                             |                  |
| Sensicam            | Sensicam              | PCO Sensicam camera adapter               |   |      |   |                            |                                |                             |                  |
| SimpleAF            | SimpleAF              | Exhaustive search AF - 100XImaging Inc.   |   |      |   |                            |                                |                             |                  |
| SimpleAutofocus     | SimpleAutofocus       | SimpleAutofocus Finder                    |   |      |   |                            |                                |                             |                  |
| SpectralLMM5        | LMM5-Hub              | Description N/A                           |   |      |   |                            |                                |                             |                  |
| SpectralLMM5        | LMM5-Shutter          | Description N/A                           |   |      |   |                            |                                |                             |                  |
| SpotCamera          | Spot                  | SpotCam                                   |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Wheel-A               | Lambda 10 filter wheel A                  |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Wheel-B               | Lambda 10 filter wheel B                  |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Wheel-C               | Lambda 10 wheel C (10-3 only)             |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Shutter-A             | Lambda 10 shutter A                       |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Shutter-B             | Lambda 10 shutter B                       |   |      |   |                            |                                |                             |                  |
| SutterLambda        | Shutter-DG4           | DG4 shutter                               |   |      |   |                            |                                |                             | L                |
| SutterLambda        | Wheel-DG4             | DG4 filter changer                        |   |      |   |                            |                                |                             |                  |
| ThorlabsDCxxxx      | Thorlabs DC2010/DC2   | DC2010/DC2100 High Power LED Driver       |   |      |   | henceforth to specif       | v the device.                  |                             |                  |
| ThorlabsDCxxxx      | Thorlabs DC3100       | DC3100 FLIM LED Driver                    |   |      |   | 920 - 1                    | ,                              |                             |                  |
| ThorlabsDCxxxx      | Thorlabs DC4100       | DC4100 Four channel LED Driver            |   |      |   | Device names               |                                |                             |                  |
| ThorlabsFilterWheel | Thorlabs Filter Wheel | Thorlabs filter wheel                     | = |      |   | Device names               |                                | 20 0000 000 00              | un 10 un         |
| ThorlabsSC10        | SC10                  | ThorLabs SC10 shutter controller          |   |      |   | The first column sho       | ows the device's assigned n    | ame for this particular cor | itiguration. You |
| TIScam              | TIS_DCAM              | TIScam                                    |   |      |   | can edit device nam        | es by double-clicking in the   | first column. Device name   | es must be       |
| TwainCamera         | TwainCam              | Twain camera                              |   |      |   | unique and should r        | not contain any special cha    | racters. In subsequent ste  | ps of the        |
| Utilities           | Multi Shutter         | Combine multiple physical shutters into a |   |      |   | Wizard all devices w       | ill be referred to by their as | signed names                | 50<br>           |
| Utilities           | DA Shutter            | DA used as a shutter                      |   |      | 1 | Theard an acvices in       | in be referred to by their da  | signed names.               |                  |
| Utilities           | DA Z Stage            | DA-controlled Z-stage                     | - |      |   |                            |                                | < Back                      | Next >           |

17. Bitte gehen Sie zu Schritt 9 von 9 mit "Next" und benennen Sie die Konfigurationddatei um. Klicken Sie bitte den Button "save and test the new configuration" und verlassen Sie den "Hardware Configuration Wizard" mit "Exit".

| onfiguration file:   |                          |
|--|--------------------------|
| :Wicro-Manager-1.3\ProgRes.cfg                               | Browse                   |
| Save and test the new configuration                          |                          |
| uccess!  |                          |
|  |                          |
| e configuration Wizard finished building the hardware config | guration for your system |
|  |                          |
|  |                          |
|  |                          |
|  |                          |

Nun ist die neue Micro-Manager Konfigurationsdatei erfolgreich erstellt und Sie können mit dem Betrieb Ihrer ProgRes® Mikroskopkamera mit der Micro-Manager Software starten.

18. Um alle Kamerafunktionen einzurichten, öffnen Sie bitte "Device/Property Browser" unter Tools.

|  | o-Manager-1.3\ProgRes.cfg  |   |   |  |
|--|--|---|---|--|
| File Image5D Too   | ls Plugins Help  |   |   |  |
| 🗐 Snap 🕏   | Refresh GUI  | iguration settings  | Save  |  |
| Live   | Rebuild GUI  | ip Preset   |   |  |
| Acquire  | Script Danal   |   |   |  |
| Multi-D Act  | Script Panel   |   |   |  |
| Burst  | Device/Property Browser  | 1   |   |  |
| Refresh  | XY List  |   |   |  |
| ROI  | Multi-Dimensional Acquisition  |   |   |  |
|  | Burst Acquisition  | : + - Edit Pres   | + - Edit  |  |
| Full   | Split View   |   | ]   |  |
| Auto   | Mouse Moves Stage  |   |   |  |
| Log hist.  |  |   |   |  |
| Min  | Hardware Configuration Wizard  |   |   |  |
| Max  | Pixel Size Calibration   | 0   |   |  |
| Avg<br>Std Dev   | Load Hardware Configuration  |   |   |  |
| Comoro.  | Save Configuration Settings  |   | (2)   |  |
| Gamma 1  | Options  |   |   |  |
| Image size: 1280 V 4   | 024 X 2 Intensity range: 14 hits Operation   |   |   |  |
| mage size: 1300 X 10   | Image size: 1360 X 1024 X 2, Intensity range: 14 bits, 0nm/pix   |   |   |  |
| Property Browse  | er   |   | <b>– –</b> X  |  |
| Show comerce   |  |   |   |  |
| Chawabutters   | S Refresh!   |   |   |  |
| Show shutters  | Show read-only pro   | perties   |   |  |
| Show stages  |  |   |   |  |
| Show discrete c  | hangers  |   |   |  |
| Show other devi  | ices   |   |   |  |
| Property   |  | Value   |   |  |
| Jenoptik-ProgRes-Ac  | quisitionMode  | 1360 x 1024 Raw   |   |  |
| Jenoptik-ProgRes-Au  | ItoExposureControl   | Off   |   |  |
| Jenoptik-ProgRes-Au  | itoExposureControlTargetBrightness   | 0 ( )   | 4   |  |
| Jenoptik-ProgRes-Ca  | ameraTriggerInEnable   | No  |   |  |
| Jenoptik-ProgRes-Ca  | ameraTriggerOutLevel   | 0 ( 111   | 4   |  |
| Jenoptik-ProgRes-Ca  | ameraTriggerOutOnEndExposure   | No  |   |  |
| Jenoptik-ProgRes-Ca  | ameraTriggerOutOnStartExposure   | No  |   |  |
| Jenoptik-ProgRes-Co  | olorMode   | Grayscale   |   |  |
| Jenoptik-ProgRes-Co  | aur Correction Matrix  |   |   |  |
| Jenoptik-ProgRes-Co  | lour Correction Matrix   | h tandard   | 4   |  |
| Jenoptik-ProgRes-Eg  | volurCorrectorination<br>volurInterpolationCode<br>vulizerEnable   | Off   |   |  |
| Periop art i agrees ag   | ualizerEnable<br>JualizerLimit   |   | 4   |  |
| Jenoptik-ProgRes-Ex  | Jour Correction Matrix<br>Jour InterpolationCode<br>JualizerEnable<br>JualizerLimit<br>posure  | Off<br>0  | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo   | Jour Correction Matrix<br>Jour InterpolationCode<br>JualizerEnable<br>JualizerLimit<br>posure<br>JoursBlue   | Off 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 4<br>6  |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo   | Jour Confection Harrix<br>Jour InterpolationCode<br>JualizerEnable<br>JualizerLimit<br>posure<br>JoursBlue<br>JoursBlue<br>JoursRed  | Off         •         •           0         •         •           100         •         •           Off         Off         •   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo  | Jour Correction Matrix<br>Jour InterpolationCode<br>JualizerEnable<br>JualizerLimit<br>Joposure<br>JocusBlue<br>JocusGreen<br>JocusRed<br>JocusState   | Off         0         • | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga   | Jour Correction Habitx<br>Jour Correction Factor<br>Jualizer Enable<br>Jualizer Limit<br>posure<br>Jours Blue<br>Jours Green<br>Jours Red<br>Jours State   | Off         0         <   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga  | Jour Corrector Harrx   | Off         0         <   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga   | olour Confection Haritx<br>olour Interpolation Code<br>jualizer Enable<br>jualizer Limit<br>posure<br>iccusBlue<br>iccusBlue<br>iccusGreen<br>iccusState<br>ain<br>ammaEnable<br>ammaValue<br>kelType  | Off         0         <   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa  | olouronterpolationCode<br>jualizerEnable<br>jualizerEnable<br>jualizerLimit<br>posure<br>ccusBlue<br>ccusGreen<br>ocusRed<br>ocusState<br>ain<br>ammaEnable<br>ammaValue<br>kelType<br>iturationControlMode  | Off       0       4       100       0ff       0       4   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Sa  | Job Correction Factoria IIX<br>Job Correction Factoria IIX<br>Job Correction Code<br>JualizerEnable<br>JualizerLimit<br>posure<br>JocusBlue<br>JocusBlue<br>JocusBlue<br>JocusState<br>Join<br>JocusState<br>Join<br>JocusState<br>Join<br>JocusState<br>Join<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>JocusState<br>Joc | Off       0       100       0ff       Off       Off       0ff       0ff       0ff       0ff       0ff       0ff       0ff       0       0       0       0   | 4<br>4<br>5<br>6<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7           |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Tr.<br>Jenoptik-ProgRes-Tr.   | Job Correction and X Job Correction Code JualizerEnable JualizerEnable JualizerLimit Sposure JocusBlue JocusGreen JocusRed JocusState Join JommaEnable JommaValue KelType JuturationControlMode JuturationControlValue JosposeCorrection JosposeMirrorX  | Off       0       100       0ff       Off       Off       Off       0ff       0ff       0ff       0ff       0       1       0       0       0       0       0       0   | 4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr  | alour Confection Harrix<br>Jolour Interpolation Code<br>jualizer Enable<br>jualizer Limit<br>posure<br>jocusBlue<br>jocusGreen<br>jocusGreen<br>jocusRed<br>jocusState<br>ain<br>ammaEnable<br>ammaValue<br>kelType<br>inturation Control Mode<br>inturation Control Mode<br>inturation Control Value<br>anspose Correction<br>anspose Mirror X<br>anspose Mirror Y  | Off       0       100       0ff       Off       Off       0ff       0ff       0ff       0ff       0ff       0       1       0       0       0       0       0       0       0   | 4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4   |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr   | alou Confection Parts<br>polour Interpolation Code<br>jualizer Enable<br>jualizer Limit<br>posure<br>ccusBlue<br>ccusBlue<br>ccusGreen<br>ccusRed<br>ccusState<br>ain<br>ammaEnable<br>ammaValue<br>kelType<br>turation Control Mode<br>turation Control Mode<br>turation Control Value<br>anspose Correction<br>anspose Mirror X<br>anspose XY  | Off       0       100       0ff       Off       Off       0ff       0ff       0ff       0ff       0       1       4       0       6       0       0       0       0       0       0       0   | 4<br>4<br>4<br>4<br>4<br>4<br>4<br>4  |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr   | Jobi Confection Parts<br>Jobi Confection Parts<br>Jobi Parts Parts<br>Jobi     | Off       0       0       0       0       0ff       0ff       0ff       0ff       0ff       0ff       0ff       0       1       0       1       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       1   | 4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4 |  |
| Jenoptik-ProgRes-Ex<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Fo<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Ga<br>Jenoptik-ProgRes-Sa<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-Tr<br>Jenoptik-ProgRes-W<br>Jenoptik-ProgRes-W | alou Correction Harrx<br>alour InterpolationCode<br>jualizerEnable<br>jualizerLimit<br>posure<br>icusBlue<br>icusGreen<br>icusRed<br>icusState<br>ain<br>ammaEnable<br>ammaValue<br>kelType<br>iturationControlMode<br>iturationControlMode<br>iturationControlValue<br>ansposeCorrection<br>ansposeMirrorX<br>ansposeMirrorY<br>ansposeXY<br>BBlue<br>BGreen<br>BRed  | Off       0       100       0ff       Off       Off       Off       Off       0ff       0ff       0ff       0ff       0ff       0ff       0ff       0       0       0       0       0       0       0       0       1       1       1   | 4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4 |  |

19. Arbeiten Sie nun mit der ProgRes® Mikroskopkamera zusammen mit der Micro-Manager Software.

