

Materials List for:

Conducting Multiple Imaging Modes with One Fluorescence Microscope

Seongjin Park¹, Jiacheng Zhang², Matthew A. Reyer², Joanna Zareba^{1,3}, Andrew A. Troy⁴, Jingyi Fei^{1,2}

¹Department of Biochemistry and Molecular Biology, University of Chicago

²The Institute for Biophysical Dynamics, University of Chicago

³Faculty of Chemistry, Wrocław University of Science and Technology

⁴Nikon Instruments Inc.

Correspondence to: Jingyi Fei at jingyifei@uchicago.edu

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Materials

Name	Company	Catalog Number	Comments
Nikon Ti-E microscope stand	Nikon	Ti-E	
Objective lens	Nikon	100X NA 1.49 CFI HP TIRF	
Microscopy imaging software	Nikon	NIS-Elements Advanced Research/HC	HC includes "JOBS" module, the programmed acquisition module being used for SR imaging.
The illumination arm	Nikon	Ti-TIRF-EM Motorized Illuminator Unit M	This arm has a slot for a magnification lens
Analyze block	Nikon	Ti-A	This is installed in the filter turret.
Z-drift correction system	Nikon	PFS	This system is composed by the stepmotor on the objective nosepiece, IR LED, and a detector.
Optical table top	TMC	783-655-02R	
Optical table bases	TMC	14-426-35	
647 nm laser	Cobolt	90346 (0647-06-01-0120-100)	Modulated Laser Diode 647nm 120mW incl. laser head, CDRH control box, USB cable and PSU (Power Supply Unit)
561 nm laser	Coherent	1280721	OBIS 561nm LS 150mW Laser System
488 nm laser	Cobolt	90308 (0488-06-01-0060-100)	Modulated Laser Diode 488nm 60mW incl. laser head, CDRH control box, USB cable and PSU (Power Supply Unit)
405 nm laser	Crystalaser	DL405-025-O	405 (+/-5)nm, 25mW, Circular , M2 <1.3, Low Noise, CW, TTL up to 20MHz. 2 BNC connectors for TTL & Analog adjust
Heat sink	Cobolt	11658 (HS-03)	Two units, Heat sink without fan HS-03, Heat sink for 647 nm and 488 nm lasers
Heat sink	Coherent	1193289	Obis heat sink with fan, 165 x 50 x 50 mm for the 561 nm laser
CAB-USB-miniUSB	Cobolt	10908	Two units, communication cable for 647 nm and 488 nm lasers
aluminum for height adjustment	McMaster-Carr	9146T35	Multipurpose 6061 Aluminum, Rectangular Bar, 4MM X 40MM, 1' Long for raising 561 nm laser
aluminum for height adjustment	McMaster-Carr	8975K248	Multipurpose 6061 Aluminum, 1-1/4" Thick X 3" Width X 1' Length for raising 405 nm laser

BNC cable	L-com	CC58C-6	RG58C Coaxial Cable, BNC Male / Male, 6.0 ft
BNC adapter	L-com	BA1087	Coaxial Adapter, BNC Bulkhead, Grounded
SMA to BNC Adapter	HOD	SMA-870	Cobolt MLD lasers have SMA interface, so this adapter is used for BNC connection.
SMB to BNC Adapter	Fairview Microwave	FMC1638316-12	SMB Plug to BNC Female Bulkhead Cable RG316 Coax in 12 Inch for Coherent Obis lasers
Data Acquisition Card	National Instruments	PCI-6723	13-Bit, 32 Channels, 800 kS/s Analog Output Device for controlling lasers, DIC LED, and etc
Barrier Filter Wheel controller	Sutter Instrument	Lambda 10-B	Optical Filter Changer
Emission Splitter	Cairn	OptoSplit III	
Dichroic beamsplitter	Chroma	T640LPXR-UF2	Dichroic beamsplitter separating red emission from green emission in OptoSplit III
Dichroic beamsplitter	Chroma	T565LPXR-UF2	Dichroic beamsplitter separating green & red emission from blue emission in OptoSplit III
Emission filter	Chroma	ET700/75M	Two units, Emission filter for red emission (like Alexa Fluor 647) in OptoSplit III as well as in the Barrier filter wheel
Emission filter	Chroma	ET595/50M	Two units, Emission filter for yellow/green emission (like Cy3B) in OptoSplit III as well as in the Barrier filter wheel
Emission filter	Chroma	ET525/50M	Two units, Emission filter for blue emission(like Alexa Fluor 488/ GFP) in OptoSplit III as well as in the Barrier filter wheel
Emission filter	Semrock	FF02-447/60-25	Emission filter for violet emission (like DAPI/Alexa Fluor 405), installed in the Barrier filter wheel
Dichroic beamsplitter	Chroma	zt405/488/561/647/752rpc-UF3	Multiband dichroic beam splitter for 647, 561, 488, and 405 nm laser excitations inside of the microscope body
DAPI Filter set	Chroma	49000	installed in the microscope body
Nikon laser/TIRF filtercube	Chroma	91032	
590 long pass filter	Chroma	T590LPXR-UF1	for combining 647 nm laser and 561 nm laser
525 long pass filter	Chroma	T525LPXR-UF1	for combining already combined 647 nm and 561nm lasers with 488 nm laser
470 long pass filter	Chroma	T470LPXR-UF1	for combining already combined 647 nm, 561 nm and 488 nm lasers with 405 nm laser
Laser clean-up filter (647)	Chroma	zet640/20x	for cleaning up other wavelengths from the 647 nm laser
Laser clean up filter (488)	Semrock	LL01-488-25	for cleaning up other wavelengths from the 488 nm laser
LED light source	Excelitas	X-Cite120LED	used only for DAPI imaging
Mirror mount	Newport	SU100-F3K	

Optical posts	Newport	PS-2	
Clamping fork	Newport	PS-F	
Power Meter	Newport	PMKIT	For measuring laser power
Dichroic beamcombiner mount	Edmund Optics	58-872	C-Mount Kinematic Mount, for holding dichroic beamcombiners in the laser excitation assembly
Retaining ring	Thorlabs	CMRR	used for dichroic beamcombiner mounts
Fiber Adapter Plate	Thorlabs	SM1FC	FC/PC Fiber Adapter Plate with External SM1 (1.035"-40) Thread
Z-axis translational mount	Thorlabs	SM1Z	Z-Axis Translation Mount, 30 mm Cage Compatible
Achromatic Doublet lens	Thorlabs	AC050-008-A-ML	Ø5 mm, Mounted Achromatic Doublets, AR Coated: 400 - 700 nm
Cage Plate	Thorlabs	CP1TM09	30 mm Cage Plate with M9 x 0.5 Internal Threads, 8-32 Tap
Cage Assembly Rod	Thorlabs	ER4	Cage Assembly Rod, 4" Long, Ø6 mm
Cage Mounting Bracket	Thorlabs	CP02B	30 mm Cage Mounting Bracket
Single mode optical fiber	Thorlabs	P5-405BPM-FC-2	Patch Cable, PM, FC/PC to FC/APC, 405 nm, Panda, 2 m
Multi mode optical fiber	Thorlabs	M42L01	Ø50 µm, 0.22 NA, FC/PC-FC/PC Fiber Patch Cable, 1 m
Achromatic Doublet lens (mag lens)	Thorlabs	ACN127-025-A	ACN127-025-A - f=-25.0 mm, Ø1/2" Achromatic Doublet, ARC: 400-700 nm, a concave lens in the "mag lens"
Achromatic Doublet lens (mag lens)	Thorlabs	AC127-050-A	f=50.0 mm, Ø1/2" Achromatic Doublet, ARC: 400-700 nm, a convex lens in the "mag lens"
Retaining ring	Thorlabs	SM05PRR	SM05 Plastic Retaining Ring for Ø1/2" Lens Tubes and Mounts, for "mag lens"
Nylon-tipped screw	Thorlabs	SS3MN6	M3 x 0.5 Nylon-Tipped Setscrew, 6 mm Long, for holding "3D lens"
3D lens	CVI Laser Optics	RCX-25.4-50.8-5000.0-C-415-700	f=10 m, rectangular cylindrical lens
EMCCD camera	Andor	iXon Ultra 888	
100 nm multichannel beads	Thermo	T7279, TetraSpeck microspheres	
red dye	Thermo	Alexa Fluor 647	
yellow-green dye	GE Healthcare	Cy3	
green dye	GE Healthcare	Cy3B	
blue dye	Thermo	Alexa Fluor 488	