

Materials List for:

# Evanescent Field Based Photoacoustics: Optical Property Evaluation at Surfaces

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## Materials

Name	Company	Catalog Number	Comments
100 mm plano convex lens	Thorlabs	LA1509	Plano convex lens for beam expander
-30 mm plano concave lens	Thorlabs	LC2679	Plano concave lens for beam expander
10 MHz Ultrasonic transducers	Harisonic	I31006T	Ultrasonic sensors used for photoacoustic detection, both for laser energy measurement and for OTPAS mount
Immersion oil Type A	Cargille	16482	Index of 1.519 to match that of NBK-7 substrates
Natural latex rubber sheet (red)	McMastercarr	86085K11	Index ~1.519 to match that of Type A immersion liquid to act as an optical absorber to measure optical tunneling and laser energy
Laser goggles	VERE	53	Used to protect eyes from laser light
Cage mounted non polarizing beam splitter cube	Thorlabs	CM1-BS013	Split laser light so that one half can be measured and one half can be used for excitation
Cage mounted polarizing beam splitter cube	Thorlabs	CM1-PBS251	Ensure light is polarized before being used for optical tunneling experiments
Graduated ring activated iris diaphragm	Thorlabs	SM1D12C	Cut beam down to a smaller size for alignment
Data acquisition card	National Instruments	USB-5133	USB oscilloscope to acquire data
Stepper motor driver	National Instruments	MID-7604	Stepper motor driver to drive stepper motors for angular spectra
Sherline XY stage (14")	Sherline	5600-CNC/5610-CNC	Sherline XY stage
4-jaw self centering chuck	Sherline	1076/1034	Sherline rotational attachment
Right angle attachment	Sherline	3701	Right angle attachment to attach rotational mount
CNC rotary table	Sherline	8730	Rotary table for holding OTPAS prism/sample
Surelite I-20 laser system	Continuum	I-20	Q-switched Nd:YAG laser for exciting samples
NBK-7 prism	Thorlabs	PS911	Right angle prism for EFPA
Adjustable torque wrench	Tohnichi	RTD40Z	Adjustable torque wrench to equally tighten down the EFPA mount for each technique to 16.75 g/mm

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Digital level	Micromark	84519	Digital level to ensure EFPA prism holder starts at 0 degree.
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