

**Indian Institute of Technology Kanpur
Department of Physics**

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Tender Notice

Enquiry No.: IITK/PHY/2018-19/03
Enquiry Date: 10/07/2018
Last Date: 31/07/2018

Sealed quotations should reach the undersigned latest by 5:00 pm on 31st July 2018 for the following item:

S. No.	Description of item	Quantity
1	An inverted microscope with full manual control for setting up laser tweezers operating at 1064 nm laser wavelength	1

The above-mentioned item should meet the following technical specifications and appropriate data sheets or figures with full specifications should be attached showing the extent of compliance:

- 1. Arrangements for coupling a 1064 nm laser:** There should be arrangements or possibility of making arrangements for sending a 1064 nm collimated laser beam directly to the objective of the microscope without passing through any internal focusing optics of the microscope and without affecting simultaneous fluorescent imaging. This could be achieved either by using dual-deck filter-turret where the top and bottom turrets would be used for coupling the laser beam through the back port and fluorescent imaging respectively, or by using an external dichroic filter wheel at the back port of the microscope. A possibility of creating space in-between the filter-turret and the objective-nosepiece would also allow attaching a dichroic filter there to couple the laser.
- 2. Possibility of customization of the transmission light path:** There should be possibility of attaching a dichroic filter using a ready available or custom-made filter block in-between the condenser and the transmission-illumination. The arrangement should allow collection of 1064 nm laser light passing through the sample by the condenser and then deflecting on to a sensor (not included in the microscope).
- 3. Infinity corrected optical system**
- 4. Intermediate magnification:** Possibility of switching an intermediate magnification of 1.5X would be preferred.
- 5. Output optical ports:** Right, left and trinocular port with switchable light division, fitted with C mount adapter.
- 6. Transmitted illumination:** Conventional replaceable bulb illumination would be preferred.
- 7. Condenser:** W.D. ~ 15 mm or longer with N.A. > 0.7 would be preferred.
- 8. Sample Stage:** Manual sample stage with right hand control
- 9. Filter turret:** Provide two filter turrets if the microscope design allows that, with an empty filter block at the top turret. The bottom filter turret (or the only filter turret in case the microscope does not support

dual-deck design) should have three filter blocks for blue, green and red fluorescence (emission). Provide two additional empty filter blocks. The transmission spectra of the filter blocks (for excitation filter, dichroic mirror and the barrier filter) should be provided.

10. **Epi-illumination beam path:** In case of dual deck design, the top back port should be free of any optics and freely accessible. In case of single turret design, the epi-illumination needs to get collimated before entering through the back port laser coupler.
11. **Epi-fluorescence illumination:** Mercury lamp illumination. Fiber coupled illumination housing would be preferred.
12. **Objectives:** Quote for the following objectives as optional items mentioning separate price for each.
 - (i) Special IR objective (transmission at 1064 nm ~ 60%) with magnification 40 X / 60X / 63X / 100X with N.A. > 1.30. An objective with magnification ~ 60X with N.A. ~ 1.4 would be preferred. Provide transmission spectra for the objective(s).
 - (ii) Curvature corrected (plan) apochromatic objective with magnification 40X, dry, Long working distance objective with N.A. ~ 0.75.
 - (iii) Curvature corrected (plan) apochromatic objective with magnification 40X, oil, N.A. ~ 1.2 (higher N.A. would be preferred)
 - (iv) Curvature corrected (plan) apochromatic objective with magnification 60X / 63X, oil, N.A. ~ 1.3 (higher N.A. would be preferred)
 - (v) Curvature corrected (plan) apochromatic objective with magnification 100X, oil, N.A. ~ 1.35 (higher N.A. would be preferred)

Terms and conditions:

- Quotations should have a validity of a minimum of 60 days.
- The equipment should be provided with a warranty of 1 to 3 years.
- Quotations are required in duplicate. Technical bids and financial bids have to be in separate envelopes inside one sealed envelope sent to us with enquiry number mentioned on the envelope. Technical specifications along with the extent of compliance should be mentioned. Quotations that do not provide a compliance sheet will be rejected.
- The delivery period should be specifically stated.
- Permissible educational discount should be provided since the equipment will be used for research work of students.
- For suppliers from outside India, the rate offered should show both FOB (specify city) in the country of origin and CIF (New Delhi). IIT Kanpur has its own freight forwarder for shipping from outside India.
- IIT Kanpur is exempted from payment of Excise Duty under notification no.10/97 & partially @ 5.15% Customs Duty exemption certificate under notification 51/96. Road permit will be provided if applicable.

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