

Notice Inviting Quotation (NIQ)

Name of the Equipment: Optical Surface Profiler

Quotations are invited from reputed manufacturer / their Indian representative for the **Optical Surface Profiler**.

Specifications

S No.	Feature	Specification	Compliance / Comments
1	General Description	<ol style="list-style-type: none">1. The equipment is to be used for taking surface profile of the substrates which may be coated with a thin film by non-contact optical means.2. The equipment may consist of an Optical Microscope incorporating facility for 3-dimensional measurements, display of surface topography, capable of generating line scan, calculation of average / mean surface roughness, step height measurement for deposited thin films etc.3. The measurement to be obtained by “non-physical contact” method using white light or single wavelength (e.g. laser / LED) source. The features to be examined are in nanometer range and the measurements should be done accordingly to provide high resolution images.	
2	Illumination	White light and single wavelength light source (laser or LED)	Please specify the wavelength
3	Sample stage	100 mm x 100 mm or larger, manual movement of stage preferred. +/- 6 ° tilt desirable for better focusing, especially for highly reflecting surfaces.	
4	Microscope objective	Long working distance objective (5X, 10X, 20X and 50X), mounted on revolving turret / nosepiece, the magnification to be changed by manual rotation of objective lens /	

		turret. Magnification to be selected according to the resolution listed in the following pages.	
5	Differential interference contrast	Should be incorporated.	
6	Z focusing / movement	Precision controlled motorized movement desired with 1 nm resolution or better. Close-loop control desirable to give true image of features with different heights on the sample. Vertical scan 0-30 mm to accommodate samples of different height. Please specify the scan time.	
7	Total magnification desired	Please specify according to the resolution of 1 nm feature size which is to be resolved	
8	Measurement	Height, distance, area, volume, line roughness, plane roughness, and film thickness. The step-height measurement for measuring film thickness from 500 microns to 2 nm should be included. Please specify the minimum and maximum step-height capability, resolution and repeatability of measurement. Should be able to analyze surfaces having reflectivity from 10-90 %	
9	Image capturing	Photomultiplier tube and / or colour CCD camera having 640 x 480 pixel or more.	
10	Focusing	Auto-focus with manual over ride option is desirable.	
11	Field of view	Depending on magnification, from 100 μm x 100 μm to 1 x 1 mm or better	
12	Image processing software	To be included	
13	Image display	True color images to be displayed through a PC on LCD screen, using Window. The computer and monitor can be provided by IIT Delhi. Please specify the configuration of the computer / monitor system.	

14	Accuracy of capturing of images and analysis	Roughness (average / mean) 1 nm or better; step-height (for film thickness measurement) should be better than 5% of the measured value (e.g. the measurement should be $500 \text{ \AA} \pm 20 \text{ \AA}$ Range for height measurement: 2 nm-500 micron.	
15	Bending / curvature measurement	Desirable and may be included. For example, the instrument should be able to measure the bending of a free standing micro-cantilever in MEMS	Please specify the minimum and maximum deflection that can be measured.
16	Stitching of images to construct larger size objects	Must be included	
17	Vibration isolation Table	May be quoted separately, if required	
18	User List	User list in India and abroad with contact person's name, phone No. and e-mail ID must be provided. Supplier should arrange for demonstration of identical or similar equipment already installed in India	
19	Spare parts	May be quoted separately for 5 year operation. The supply of spare parts must be guaranteed for minimum period of 10 years.	
19	Warranty	<ol style="list-style-type: none"> 1. Minimum 1 year warranty must be included in the price quoted, 2. Additionally, warranty for 3 years/5 years (onsite) should be quoted as option. 3. Additional years of AMC should be quoted separately. 	

TERMS AND CONDITIONS COVERING SUBMISSION OF QUOTATIONS, IIT Delhi

1. Method of Submission of Quotations	<p>1. Quotations should be sent in a sealed cover and marked at the top “our NIQ reference, due date for opening, the name of the item etc.” The quotation must be in 2 separate sealed cover marked: “Technical Bid” and “Price Bid”</p> <p>2. The quotations should reach Prof. Sudhir Chandra, Room No. III-214 Centre for Applied Research in Electronics, IIT Delhi, Hauz Khas, New Delhi 110016 latest by 5 PM, Wednesday, 30 November 2011</p>
2. Local Offices	Firms located outside Delhi having their local Branch Office at Delhi will supply the material through their Delhi Office
3. Taxes	No Sales tax concession under Form “C” and “D” is admissible to this Institute.
4. Validity of Quotation	The validity of the quotations must be for three months or more
5. Delivery and rate	The rates should be quoted in FOB and CIF (inclusive of freight, insurance), taxes, duty etc. as applicable.
6. Institute Rights	The Institute reserves the right to accept or reject any or all quotations without assigning any reason. The discretion of increasing or decreasing of the quantity demanded or selecting only one items out of all quoted also vests with the Institute.
7. Terms of Payment	<p>Our normal term of Payment is by (i) Letter of Credit for Foreign Suppliers (ii) for Indian Suppliers, by cheque within 30 days after receipt of goods/material in sound condition. Please note that advance payment will not be made.</p> <p>State clearly the Name and address of the Supplier to whom the order will be placed. Also mention the “Cheque/Draft to be made in favour of and payable at ...(City/Country).”</p>
8. Rejection	Late receipt of quotation and the same not conforming to the set procedures as above will be rejected
9. Discount / Rebate	Special discount/rebate wherever admissible keeping in view that the supplies are being made for educational purpose in respect of Public Institution of National importance may please also be indicated.
10. Warranty /Compliance/ Certificate of meeting specifications	To be clearly mentioned / provided by the Supplier.
11. Manufacturer’s name and full address and country of manufacturing	Must be provided
12. Certification of registration for sales agent	Must be provided