

TECHNICAL BID PROFORMA

Item Name: “2 photon polymerized 3D printing for nano-optics”

Bidder Eligibility Criteria:

1.0	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein.			
II	Bidder Eligibility Criteria-II	Compliance (Yes/No)	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 2 similar items to IITS, NITS IISERS, CSIR Labs or other Govt. R&D organizations in the last 10 years. Purchase order copies or installation certificates with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation			
2	The bidder should have 50 lakhs turnover in any one of the last 3 Financial Year.			
3	The Bidder/OEM service center should be available in India. Proof of facility location & contact details to be provided along with technical bid.			

2.0 Technical Compliance:

SI No.	Technical specifications (each module)	Range/ Type	COMPLIED/NOT COMPLIED	REFERENCE PG.NO
1	Laser source	NIR femtosecond laser (780 nm, 250 mW)		
2	Positioning volume	50 x 50 x 20 mm ³		
3	Substrates	fiber arrays, single cleaved fibers , photonic chips wafers (from 1" to 6" / 25.4 mm to 150 mm), Glass, silicon, other transparent and opaque materials		
4	3D alignment detection accuracy	100 nm (xy) / 500 nm (z)		
5	Surface roughness Ra	≤ 10 nm		
6	Shape accuracy Sa	≤ 200 nm		

7	Feature size control	100 nm		
8	Typical height of optical elements	$\leq 250 \mu\text{m}$		
9	Typical processing time (8x lensed fibre array)	20 min		
10	Integrated femtosecond-pulsed laser	center wavelength $780 \pm 10 \text{ nm}$, average power $\geq 250 \text{ mW}$		
11	Beam scanner with print field diameter	up to $700 \mu\text{m}$, linear scan speeds of up to 6.25 m/s divided by objective magnification.		
12	Substrate positioning within travel range	$50 \times 50 \times 20 \text{ mm}^3$, for exact positioning and precise integration of adjacent printing fields with field-to-field beam positioning accuracy $\leq 500 \text{ nm}$		
13	Ultra-fast real-time hardware for pinpoint control of focus position and laser power	voxel modulation rate of 1000 kHz		
14	Changeover time between different hardware configurations (Print Sets)	$< 1 \text{ min}$		
15	detection of the substrate surface	Two complementary modes (reflection and fluorescence)		
16	Types of substrates	Transparent and opaque		
17	Process camera for live view of printing process	One		
18	Navigation cameras for substrate positioning	Two complementary modes (reflection and fluorescence)		
19	Fibre Printing Set	8x fiber arrays with FC/PC connectors, automatically controlled by the system software, integrated in the system's process chamber, detection accuracy $\leq 500 \text{ nm}$ (xy). Parameter presets for alignment and printing of microoptics with high quality (surface roughness $\leq 10 \text{ nm}$) and high throughput (typical process time: 20 min for 8x lensed fiber array)		

20	Small Feature Print Set(optional)	<p>Print head SF including immersion objective (63x, NA 1.4)</p> <p>Calibrated print field diameter: 270µm,</p> <p>Working distance: 360µm</p> <p>Field-to-field beam positioning accuracy ≤ 500 nm (typical for 200µm step width)-</p> <p>Print parameter presets for nanoscale 3D printing using 2PP</p> <p>3D printing of nano- and microscale structures with full design freedom</p> <p>Print parameter presets for nanoscale 2.5D surface patterning using 2GL;</p> <p>Ultra-precise structuring of discrete multilevel and continuous topographies, e.g. for diffractive optical elements</p>		
21	Medium Feature Print Set	<p>Magnification / NA: 25x / 0.8</p> <p>Working distance: 380µm</p> <p>Calibrated print field diameter: 700µm</p> <p>Maximum scan speed: 250mm/s</p> <p>Voxel size (xy / z) (typical): 0.6 µm / 3.6 µm</p>		
OTHER TERMS AND CONDITIONS				
22	The equipment must be able to run at Room temperature (+/- 2 degree C)			
23	Warrantee: 1 years and 2 Years AMC			
24	Installation: at IIT Madras by the supplier, with onsite training			

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the above points with document proof as required. Failing which bidders will be technically disqualified)

SIGNATURE OF BIDDER ALONG WITH SEAL OF THE COMPANY WITH DATE