INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Technical Specification for Ink-Jet Printer

1. Compatible with	(a) Organic solvents like DMF, DMSO, ACN (b) Aqueous solvents (c) Hot melts (d) UV curable ink (e) Nanoparticle ink (f) Ink viscosity: 2-20 cP (minimum range) (g) Recirculating ink supply
2. Substrate holder	(a) Heating (from room temperature up to 90°C) and cooling (from room temperature to 10°C) (b) Vacuum chuck for holding the substrate. (c) Stage accuracy ~ +/- 20 micrometer (d) Stage precision ~ 5 micrometer (e) Substrate size: 3X3 cm to 20X30 cm (f) Should be able to handle substrate having thickness range: 1mm to 25mm (g) Translation in x-y-z direction
3. Printhead	(a) Dual printheads with print head storage stations (b) Translation in x-y-z- direction (c) Low printhead exchange time (automated) with kinematic calibration (d) Variable print speed, maximum 50cm per second (e) Printhead with up to 2048 nozzles with 1-80 pL dropsize (f) Automated drop volume, speed and angle calculation. Additional software tools for data analysis and optimization. (g) Automated printhead maintenance. Compatible with purging, spitting, capping and wiping.
4. Additional features:	(a) Integrated UV curing (b) Integrated system for droplet inspection, print inspection and precise substrate alignments.

(c) Integrated with the 4-port glove-box. The front side of the glove-box should be easy detachable for ambient operation when needed.
(d) Demonstration of making perovskite solar cells of 100 cm^2 and 500cm^2 with the system is mandatory. The process should include standard methylammonium lead iodide and multi-cation multi-anion perovskite inks.
(e) Needed power requirements should be compatible for Indian standard, 220V AC.