



**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**  
**MATERIALS MANAGEMENT DIVISION**  
Powai, Mumbai 400076

**Reference No. 32 PR No. 1000016543 (Rfx No. 6100000725)**

**Detailed Technical Specifications for Next Generation Sequencing (NGS) platform**

1. The system should be able to do Next Generation Sequencing and also have an in-built scanner that can able to scan microarray chips.
2. This should be a single instrument that performs clonal amplification, sequencing by synthesis sequencing (SBS), paired-end run and primary data analysis.
3. System should offer flexible scalability from 20–120 Gb (130-400 million cluster) in a single run to support a broad range of applications, including metagenomic sequencing, de-novo sequencing and re-sequencing of microbes, complete de-novo sequencing and re-sequencing of higher eukaryotes including human and plant genomes, ChIP sequencing, transcriptome sequencing (microbial, plants and human), etc.
4. The system should also include an option to integrate with a cloud based genomic computing environment without additional cost.
5. The sequencing technology should offer accurate sequencing of homopolymers (up to 20 bases) and highest read quality score of Q30 for more than 75% of the base calls having >99% accuracy ensuring quality control steps. The system should offer greater than 99% single pass accuracy.
6. Library preparation should be easy and completed within 8-10 hrs with minimal hands-on time. Flexibility for using third party reagents for library preparation should be there.
7. System should be able to sequence multiple samples at a time with option of using barcodes for sample multiplexing (up to 384).
8. The system should include latest software, hardware, accessories and technology available at the time of installation which is needed for generating high quality sequence reads.
9. **The vendor should offer at least 2 yrs of AMC and 7 yrs post purchase service and parts support.**
10. The vendor should have service support center at Mumbai region
11. The sequencing chemistry should be robust and globally proven, demonstrated with over 10,000+ peer reviewed publications
12. The vendor should also offer kits and reagents for library preparation from DNA/RNA