

## Annexure – II

Name of the Technology

### **Technology for As – Se based Chalcogenide glass manufacturing and polishing:**

- i) Manufacturing of As – Se based Chalcogenide glass ingots
- ii) Process technology for As – Se based Chalcogenide glass polishing

### **Description of Technology:**

The offer provides the technology for manufacturing of As-Se based bulk chalcogenide glass ingots which are used as windows for 3 – 5  $\mu\text{m}$  and 8 – 12  $\mu\text{m}$  wavelength ranges for thermal imaging and sensor applications. This technology also offers the processing of As-Se based bulk chalcogenide glass ingots into glass blanks through cutting, grinding and polishing to be used as IR windows

### **Abstract**

CGCRI has developed the technology for manufacturing of As-Se based bulk chalcogenide glass ingots weighing upto 1.2 kg to fabricate IR windows. These windows are suitably used in night vision devices as uncooled detectors replacing expensive IR windows made of Ge single crystal. The manufacturing technology involves utilizing high pure (5 N) raw materials for synthesizing the glass followed by optimized distillation process to obtain ingots.

CGCRI has also developed the process technology for polishing of As – Se based chalcogenide glass ingots to fabricate IR windows of 10 mm - 83 mm  $\phi$  x 2mm - 40 mm thickness. This process includes precision cutting, grinding followed by mechanical polishing.

These As-Se based chalcogenide glass has transmission above 60% (15 mm thickness) in 0.9 – 13  $\mu\text{m}$  wavelength range.

The companies interested in the above technology should have prior knowledge/ experience and suitable facility of handling, processing, testing of Chalcogenide glass and its application in a field similar to that mentioned above.

The ToT is also possible separately for any of the two abovementioned technologies.

