

# Summary Slide (FIP/2-4)

- Indigenous calibration and test facilities were designed and fabricated at Institute for Plasma Research for rigorous experimental validation of diaphragm seal type pressure sensors and non-contact pulse radar level sensor as part of R&D towards liquid Pb/Pb-16Li process instrumentation.
- A differential temperature measurement based interface detection technique using bulk temperature profiling was studied and validated for liquid Pb-16Li.
- High reliability and availability was observed for tested sensors in high-temperature, high-pressure liquid Pb/Pb-16Li applications.
- Error estimated from over 1000 hour performance tests:
  - For non-contact pulse radar level sensor: within  $\pm 10$  mm on liquid Pb.
  - For diaphragm seal type pressure sensor: within 1.1% of span on liquid Pb-16Li.
- Further design optimizations and compatibility with environmental factors (like magnetic field, radiation etc.) need to be addressed for qualification of sensors relevant to applications foreseen in fusion test blankets.