ALCOR - dRICH Readout

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ePIC Electronics & DAQ WG meeting
ASICs & Electronics Monthly Progress Reports

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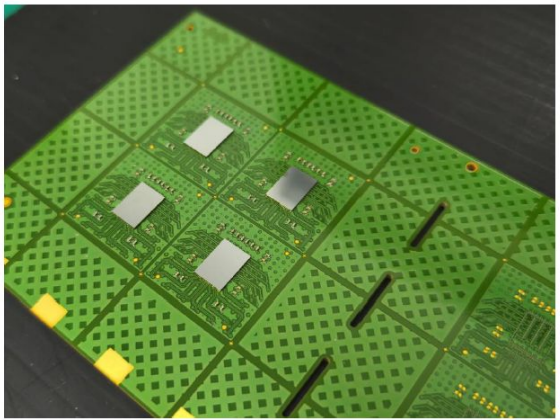
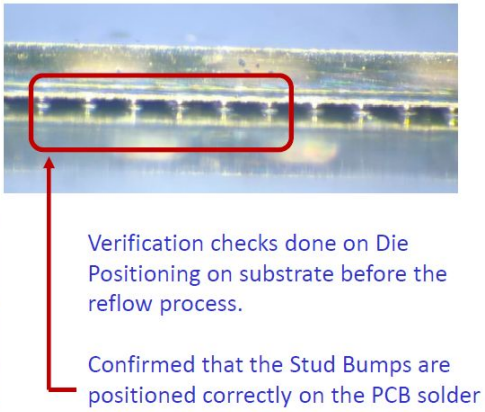
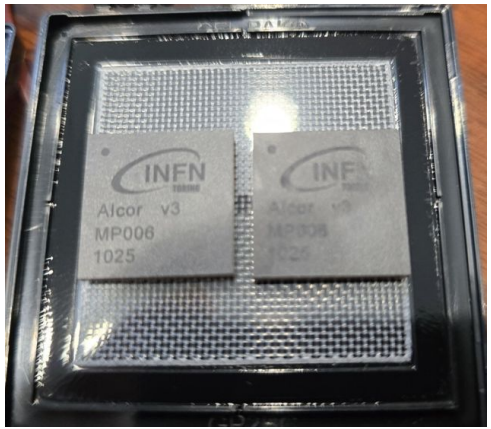
ALCOR 64 packaging status

- Packaging company (I-Tronics) confirmed **ALCOR packaging issue is due to UBM process**
- Proposed **recovery solution**, using ***gold stud bump***, reduces/avoids solder overflow
- **Completed packaging on 4 ALCOR dies** to test this solution, **BGA devices received last week**, assembly on ALCOR FEB now ongoing → **first tests by end of February**







Parallel activity to evaluate possibility for a new MPW run and identify alternatives for UBM process

ALCOR schedule

ALCOR ASIC development schedule depends on results from first **tests on new ALCOR 64 to be performed next weeks** → more news next month

- ALCOR-based readout validated with several beam-tests at CERN (Oct 2023, May 2024, Nov 2025) using ALCOR 32 and prototype PDUs
- Next beam tests on May and June → plan is to have for the first time dRICH real scale prototype and PDU final design (ALCOR 64 + RDO)

Tentative **ALCOR ASIC schedule** for the ePIC dRICH

- Readout A.0 - February-March 2026, ALCOR 64 electrical characterization (no detector tests)
- Readout A.1 - June 2026, ALCOR 64 beam test (detector tests ready)
- Readout A.3 - 2027, ALCOR Production