Photonics and RF Packaging

R&D expert services and manufacturing for photonics and electronics

VTT has over 30 years of experience on advanced photonics hybrid-integration and packaging technologies. High-performance photonics modules and instruments are implemented using the in-house manufacturing and assembly processes and the multi-disciplinary design and testing capabilities.

Special benefits:

- Combination state-of-the-art and novel fabrication approaches with already mature processes
- Access to VTT’s very extensive partner network on research, photonics component suppliers, high-volume production, system integration, etc.

Application examples:

- Sensing
- Communication
- Lighting
- High-reliability; space, military, etc.
- High-volume consumer devices
Assembly and packaging at wafer, chip and module level:

- High-precision photonics assembly
  - Active and passive alignment
- Flip-chip, die attach, soldering and adhesive bonding
- Fiber pigtailing, also with fiber arrays
- Encapsulation and packaging for reliability; including hermetic sealing
- Thermal management; with advanced solutions
- High-performance electronics integration up to mm-wave frequencies
• Chip-scale and wafer-level packaging
• Hybrid integration
  • Si, InP and GaAs chips/wafers
• System-on-Package

Complete offering and unique benefits:
• Photonic Integrated Circuits
  • Thick-SOI silicon photonics
  • Polymer waveguides
• Advanced packaging substrates and interposers
  • Multilayer ceramics circuits and substrates (LTCC)
  • Flexible electronics
• Design
  • PICs, packaging, optics, electronics
• Testing
  • Automated wafer-level testing
  • Testing and characterization of chips and modules
  • Reliability testing