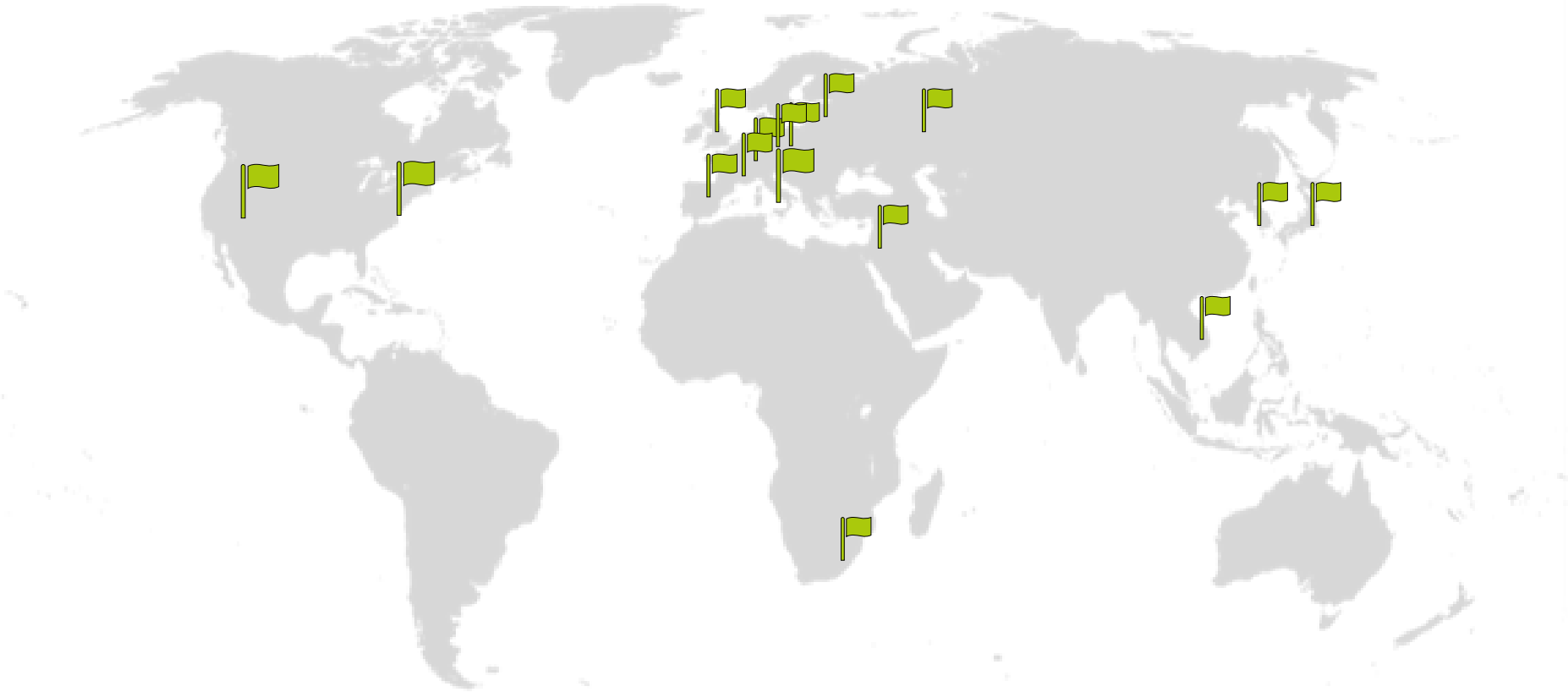
Company Profile

Beckermus Technologies provides advanced assembly and integration services in the fields of Micro electronics & optical elements.

Family-owned private company, founded in 1998 by the Beckermus brothers Oded & Oren out of their vision to create an Excellence Center in the field of "Bare Die“ & optical assembly services.

Customers distribution

Alongside with the growth of the local startup community, Beckermus has extended its support to customers worldwide (R&D\NPI to volume production)



Facility

Caesarea, Israel

2200 SQM facility

- **1100 SQM production floor**
- **1100 Offices & WHs**

Production floors

Building 1
Headquarters, NPI\R&D Center,
800 SQM clean room

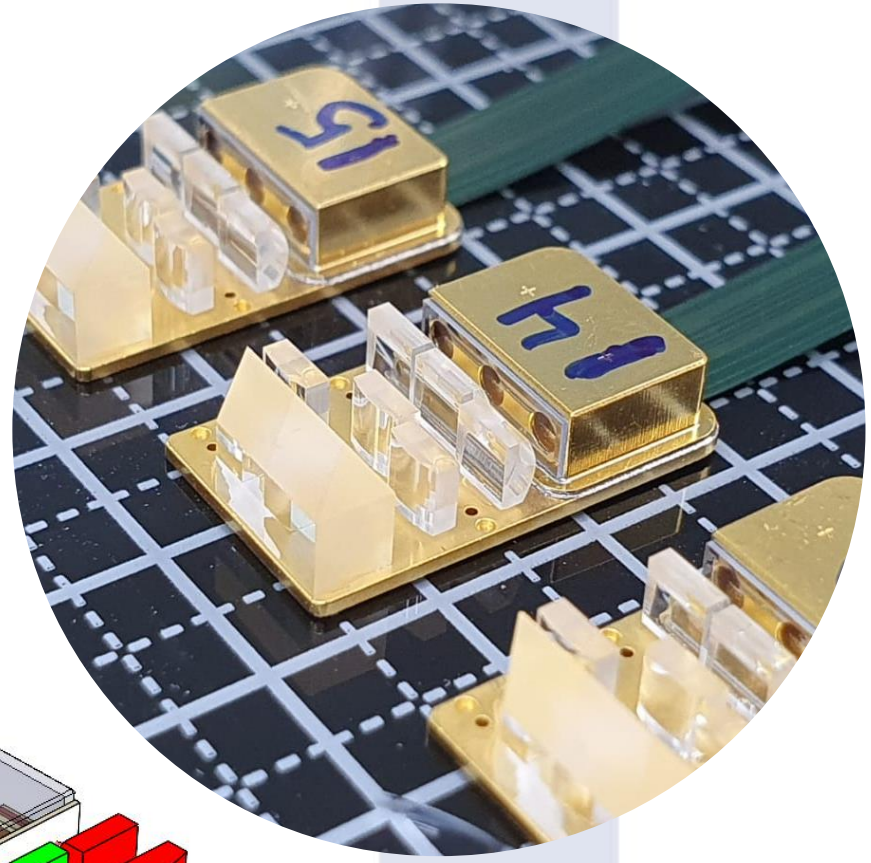
- Cleanness ISO 7\6\5 (class 10K\1K\100)
- High end automated machinery
- Inhouse CNC workshop

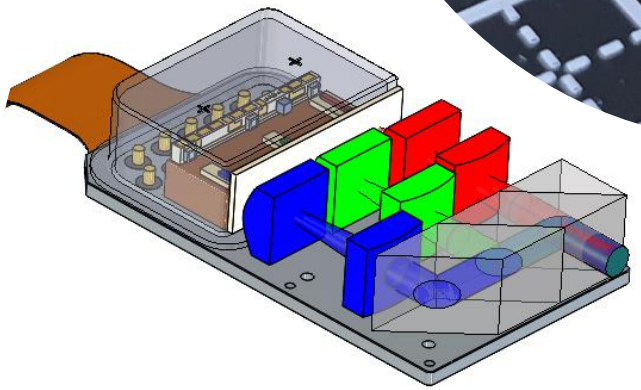
Building 2
Production Facility
300 SQM clean room

- ISO 7\6 (class 10K\1K)
- 4 automated production lines

Experience & expertise

- Product DFx services
- Assembly process development
- NPI to serial production
- customization & establishment of dedicated production lines
- Development & implementation of testing processes
- QMS & traceability infrastructure.
- Quality control





Customer distribution by sector

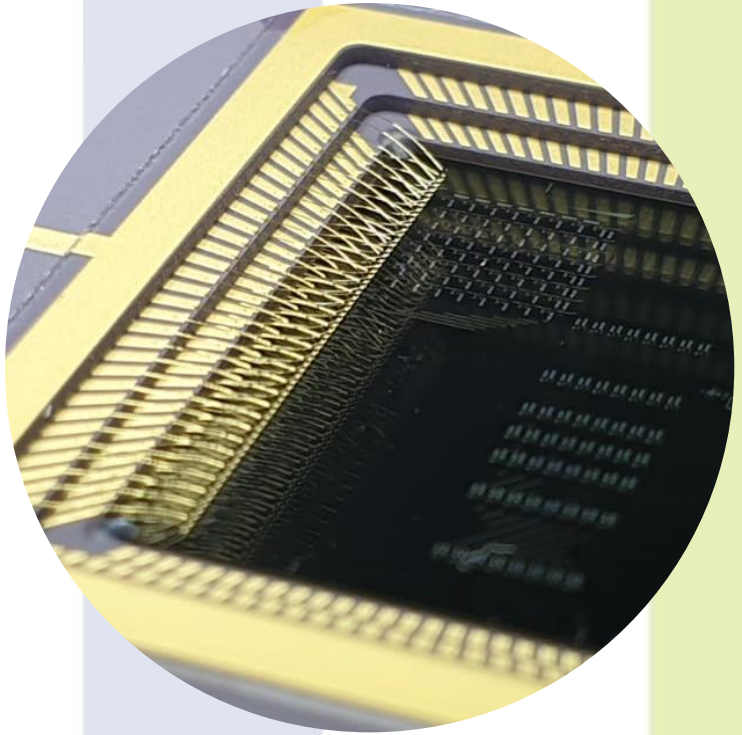
Communication
Optical TX-RX (QSFP), RF Modules, switches, filters, amplifiers…

Automotive
ADAS, Radar, LIDAR…

AR\VR
Miniature Projectors, 3D imaging systems, 3D cameras ..

Medical
Endoscopes, Esthetic treatment, Invasive Surgery equipment, implants, miniature CT scanners, Internal ultra-sound imaging

Aerospace&Aviation\Homeland security
gyroscopes, atomic clocks, acceleration meters, magnetic sensing ..



Quality Standards

- AS9100 REVD – Aerospace standard.
- ISO9001:2015 – Quality management systems.
- ISO 13485:2016 – Medical devices - Quality management systems, Complies with MIL STD 883.
- IPC-A-610 - Acceptability of electronic assemblies.
- ISO 14644 – Cleanrooms and associated controlled environments are filtered in accordance with ISO 7 regulation.
- ISO 16949 – In process


CERTIFICATE

This is to certify that the Quality Management System of

BECKERMUS TECHNOLOGIES LTD.

29 Haeshel, Industrial Zone 3088900, Ceasarea, Israel

Has been audited and registered by SII-QCD as conforming to the requirements of :

ISO 9001:2015

This Certificate is Applicable to

Subcontracting of micro-electronic assemblies for aerospace, medical devices, automotive and high-tech industries.

Certificate No.: 91718
Initial Certification Date: 14/11/2017
Certificate Issue Date: 14/11/2017
Certification Expiry Date: 13/11/2020


CERTIFICATE

This is to certify that the quality management system of

BECKERMUS TECHNOLOGIES LTD.

29 Haeshel, Industrial Zone 3088900, Ceasarea, Israel

Has been audited and registered in accordance with the requirements of AS9100(C) Rev.2009 (E)
The Standards Institution of Israel is accredited under the Aerospace Registrar Management Program
and declares that the quality system of the above-named organization is in conformance with:

ISO 9001:2015/AS9100D

The quality management system is applicable to

Subcontracting of micro-electronic assemblies for aerospace and high-tech industries.

Initial Approvals: 14/11/2017
Re-certification Approvals: 14/11/2017
Valid Until: 13/11/2020
Certificate No.: 91718
IAC Code: 19/21


CERTIFICATE

This is to certify that the Quality Management System of

BECKERMUS TECHNOLOGIES LTD.

29 Haeshel, Industrial Zone 3088900, Ceasarea

Has been audited and registered by SII-QCD as conforming to the requirements of :

ISO 13485:2016

This Certificate is Applicable to

Subcontracting of micro-electronic assemblies for aerospace, medical devices, automotive and high-tech industries.

Certificate No.: 91333
Initial Certification Date: 02/11/2017
Certificate Issue Date: 02/11/2017
Certification Expiry Date: 01/11/2020


IQNet®

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and
THE STANDARDS INSTITUTION OF ISRAEL
hereby certify that the organization

BECKERMUS TECHNOLOGIES LTD.

for the following field of activities

Subcontracting of micro-electronic assemblies for aerospace, medical devices, automotive and high-tech industries.

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

ISO 9001:2015

Issued on : 14 . 11 . 2017
Date of expiration: 13 . 11 . 2020
Date of initial approval: 14 . 11 . 2017

Registration number: IL-91718

Alex Stoichitoiu
President of IQNet

Ilan Carmit
Acting Director General

IC Assembly methods

Die Attach

- Manual\Automatic
- Placement accuracy down to ±0.5 µ
- High UPH throughput (up to 10K per hour)

Flip Chip

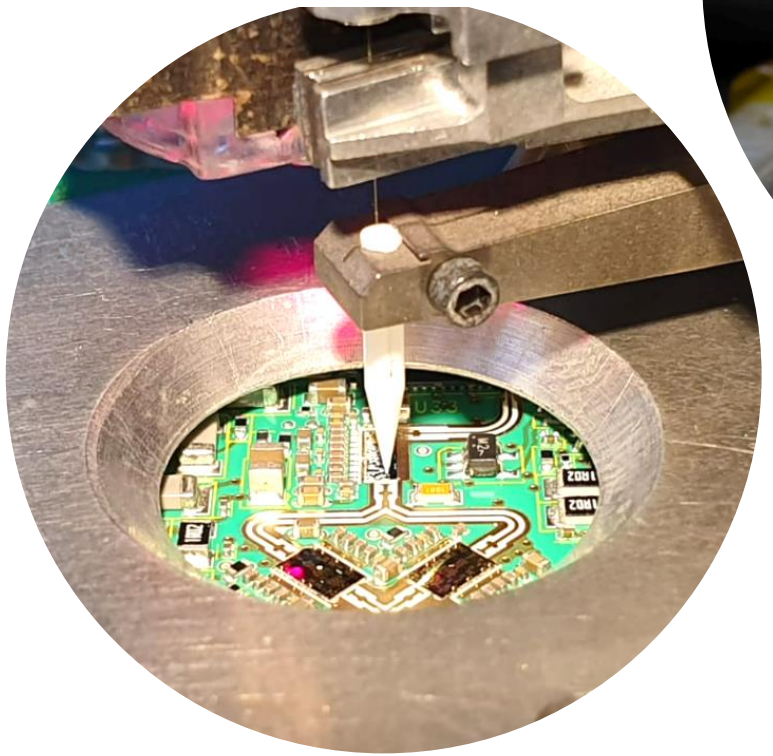
- Manual\Automatic
- Placement accuracy down to 0.5 micron.
- Inert soldering.

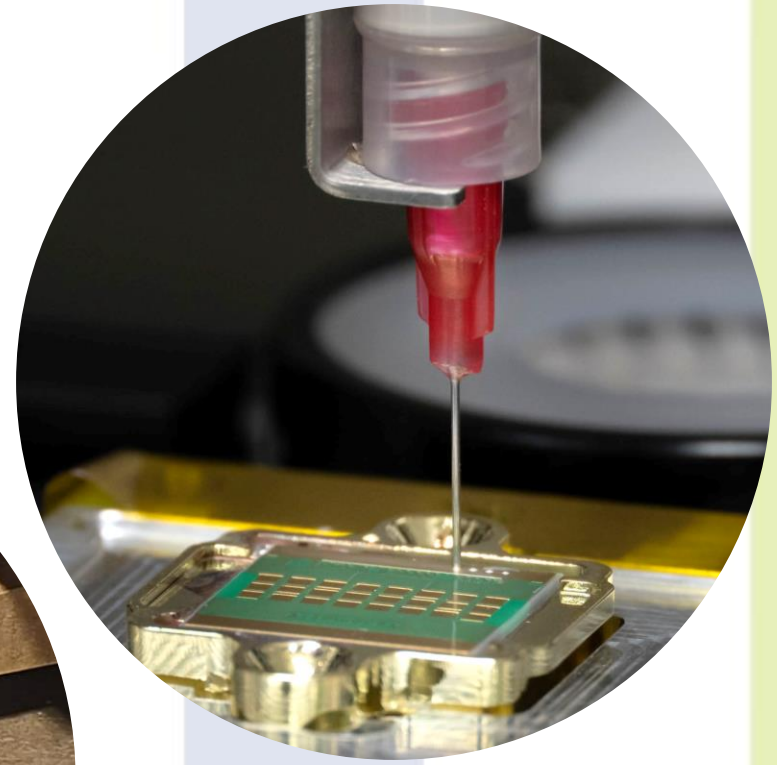
Wire Bonding

- Au & Al automatic wire bonding.
- High accuracy bond placement (2 µ)
- Fine-Pitch (Down to 45 microns)
- Ultra low loop\shape

Encapsulation

- Glob Top
- Dam & Fill
- Selective
- Under Fill
- Low Profile





IC Assembly Applications

Chip on Board\ Flex

- Die size - down to 100µ square.
- Pads pitch ≥ 45µ (0.7 mil wire diameter).
- Ultra low loop\shape, advanced wire bond loops.

3D Stacked Dies

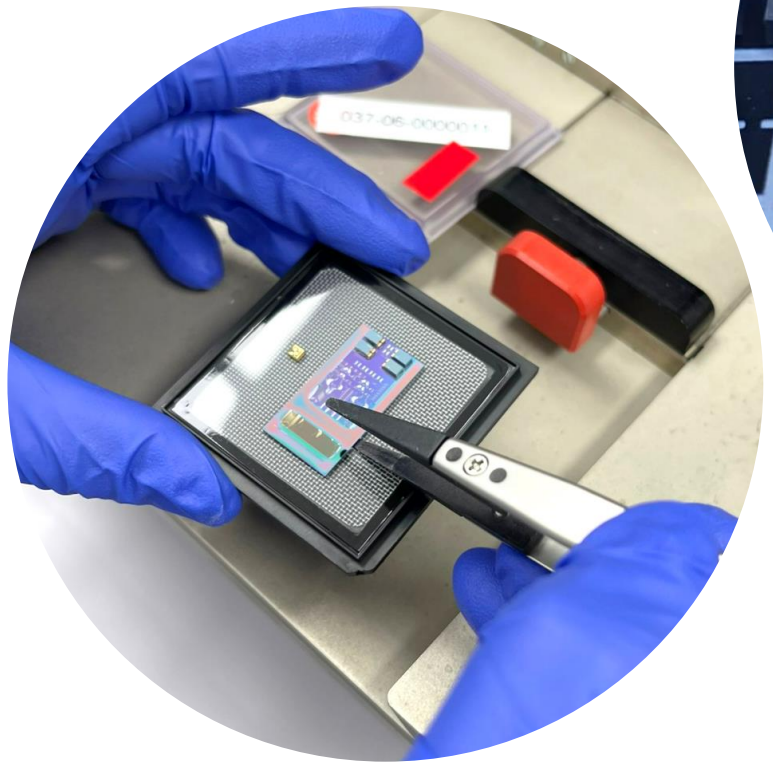
- Complex structure assembly
- Technologies: flip-chip inert soldering, conductive and nonconductive epoxy gluing, UnderFIll and wire bonding.

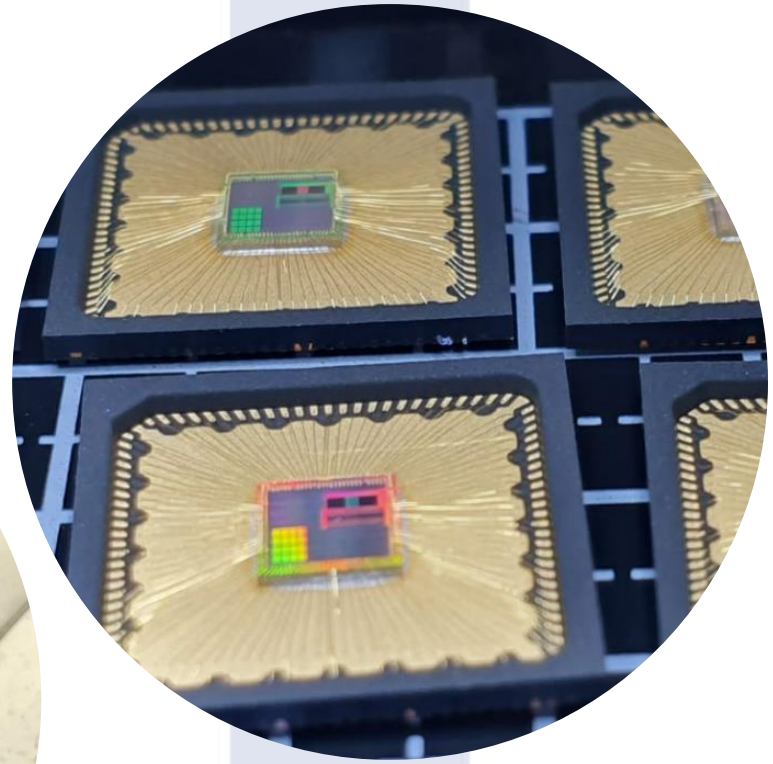
Wafer Level Packaging - WLP

- Placement accuracy down to ±1 µ
- Automated die bonding on wafer.
  - Wire bonding.
  - Flip Chip – gold, solder, Cu bumps.

Wafer Dicing (3rd party)

- Multiple size wafer processing.
- Bumped wafer dicing.
- Partial\individual die dicing.
- Sorting into gel-packs\waffle packs.





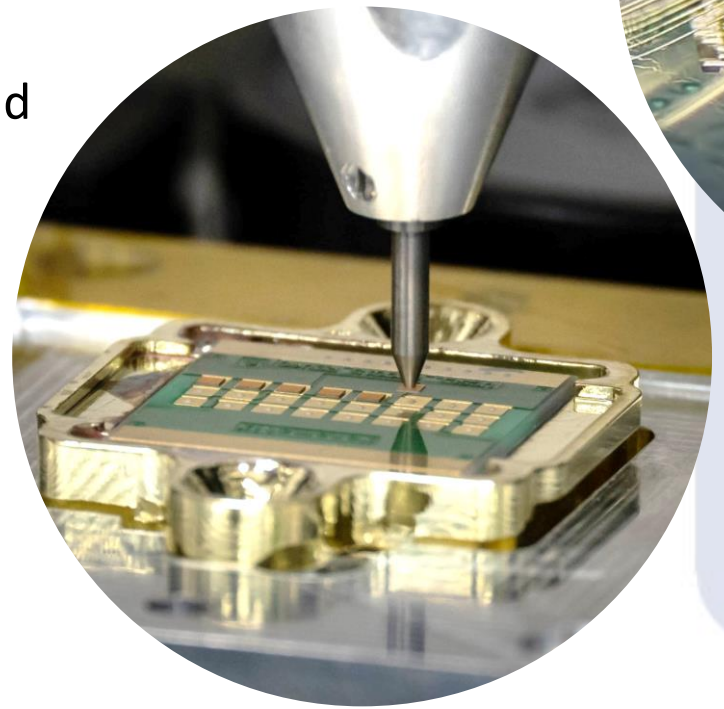
IC Assembly Applications

Dies

- PIC (photonic IC)
- MEMS\MEOMS
- Scanning mirrors
- Bare image sensors (CMOS\CCDs)
- RF TX\RX bare dies & systems
- High power components
  - LEDs
  - Laser emitters\VCSELs
- Pressure sensors
- Gyroscope
- MCM\SIP

Substrates

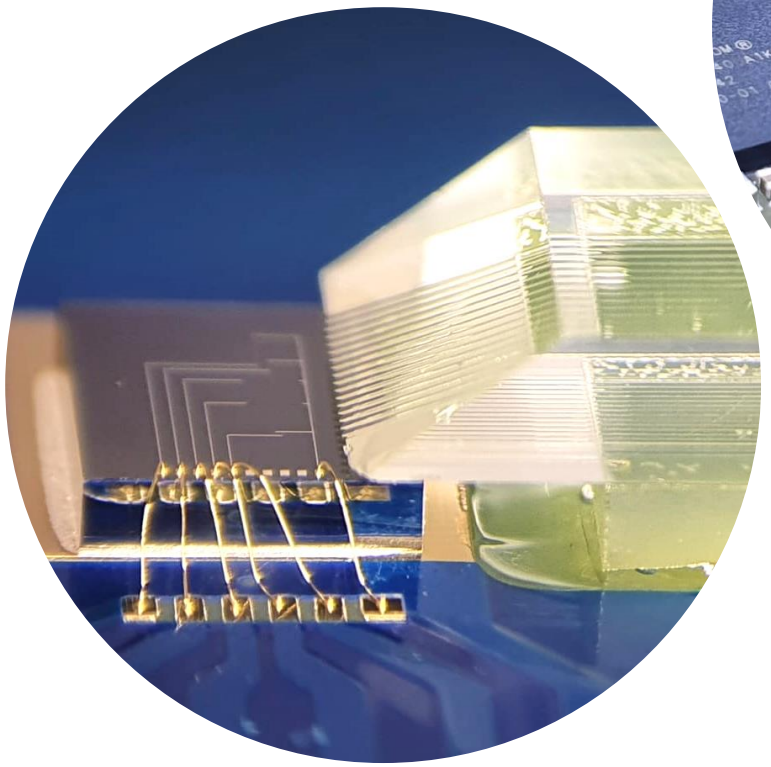
- FR4
- Flex
- Ceramic
- Silicon
- Glass
- Teflon
- Diamond

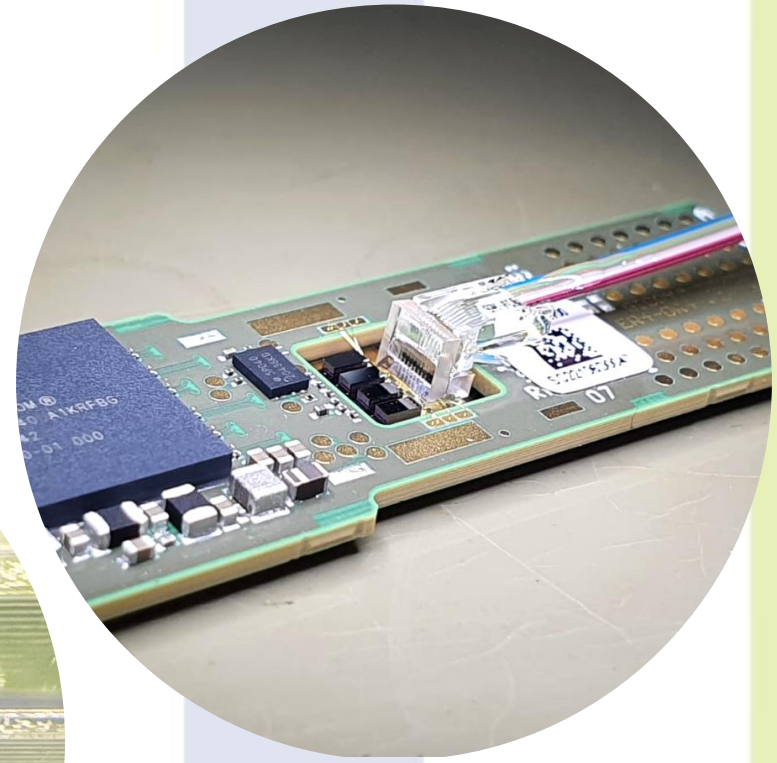


Optical systems

Photonics and optic components assembly

- Optical fibers coupling to PIC.
- Active alignment positioning:
  - Lenses collimation (FAC\SAC).
  - Beam combiner\splitter
  - Prism\Mirror.
  - Optic Isolator.
- High complexity optical modules assembly.
- Image sensor lens focusing (MTF)

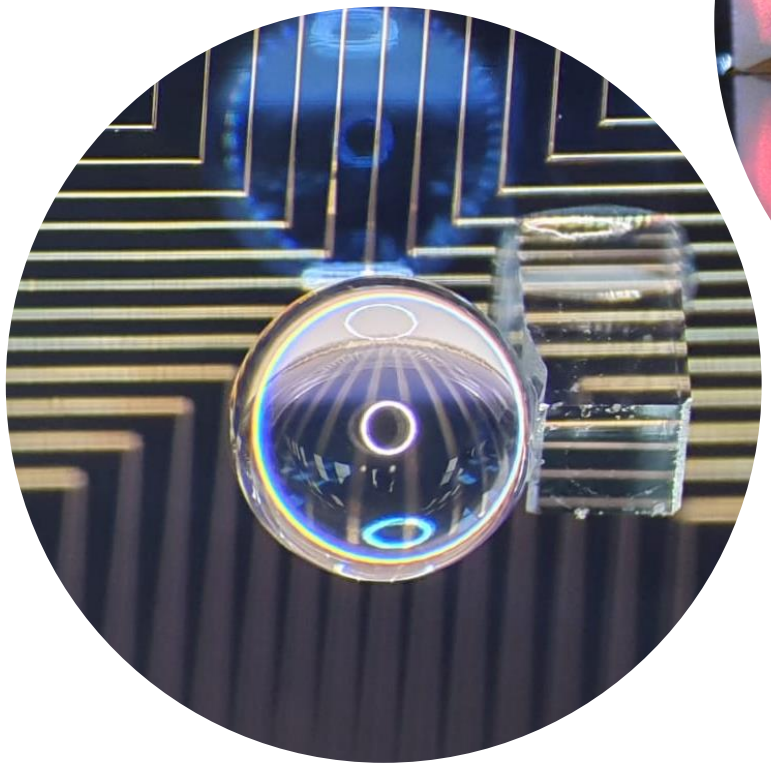


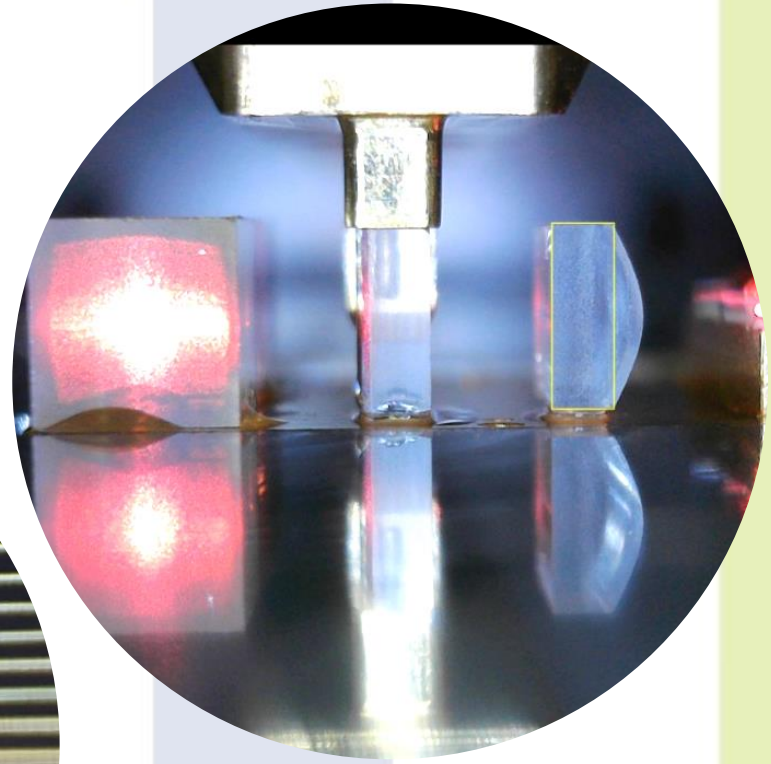


Optical systems

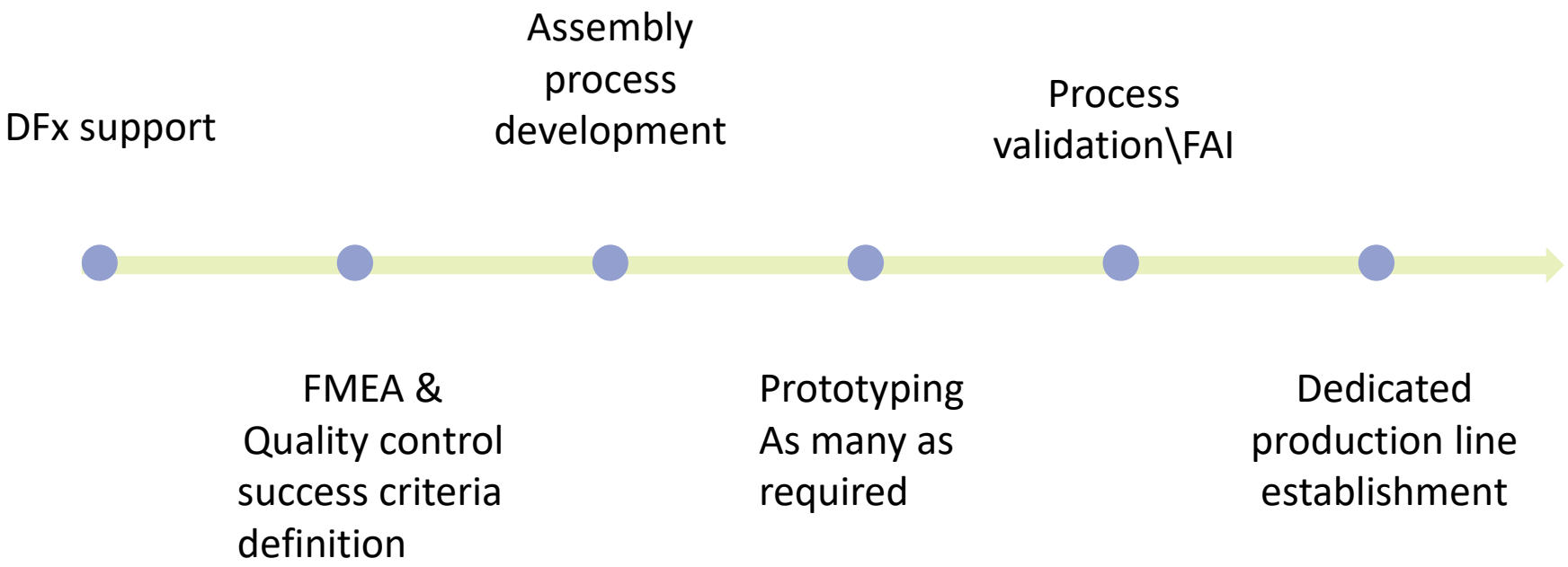
Technical capabilities

- Automatic Active alignment process, including 6 Axis degree of freedom (DOF) in nanometric scale.
- Passive placement accuracy down to ±1 µ.
- Realtime beam profiling (divergence, pointing angle, waist distance etc..)
- Automated high precision adhesive dispensing & curing control.
- LED\Laser testing & characterization (LIV, wavelength, polarization, divergence, linear array smile, M^2, burn-in).
- Highly modular automatic platforms for versatile applications development.





Project Flow



Thank you!