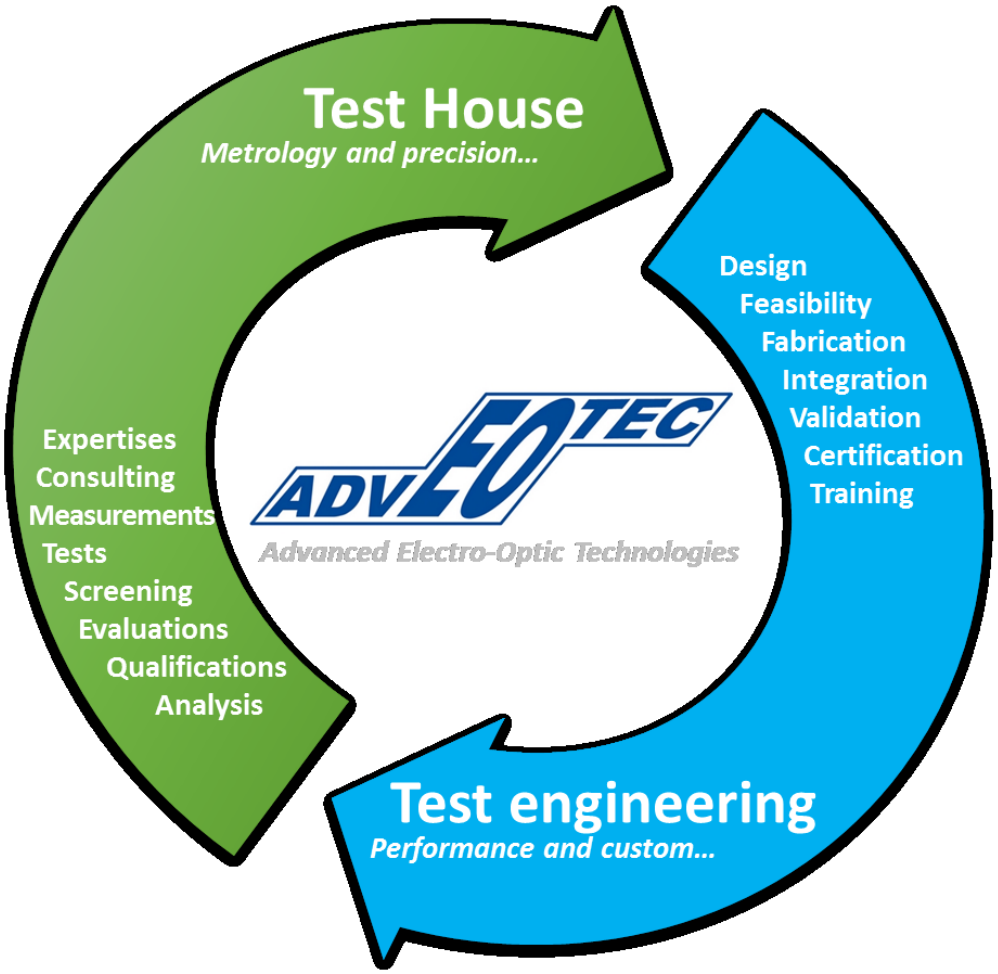
Measurement and Test House for optoelectronic components and systems

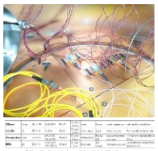
Optoelectronics systems measurements and test engineering



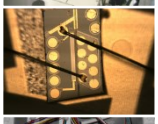
Optoelectronic components tested

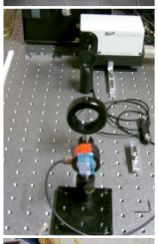
in harsh and demanding environment

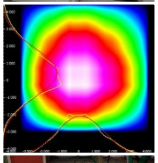
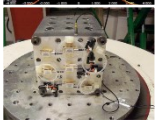
AdvEOTec's Test House is expert in the **reliability of optic, electronic, optoelectronic and photonic components**. Access is given to a modern laboratory dedicated to **measurement**, **tests**, **reliability evaluation**, **qualification** and **analysis** for your applications…









Since 2003, AdvEOTec has been providing services as **measurements, tests** and **expertise** on optoelectronic and photonic components and systems within characterization, evaluation and qualification programs…

Its laboratory is dedicated to severe and demanding environment: **Space**, **Aeronautics**, **Industry**, **Defense**, **Energy**, **Transportation**, **Telecommunications** and **Radiation**.

Technical and economic studies

- **Technical and market analysis**
- A network of qualified partners
- **Expertise** new optoelectronic technologies
- Component procurement

Evaluation

- **Characterization of optoelectronic components and systems**
- Metrology benches, Metrology systems, standard and specific procedures for your application
- **Evaluation** of critical points
- Design, construction and validation of benches, systems and tools
- **Compliance analysis**
- Development of screening plan and qualification program

Screening

- **Inspections, measurements** and **tests** under **optical, thermal, electrical or mechanical stresses**
- Burn-in and infant mortality screening
- Component traceability by lot

Qualification programs : Test, Measurement, Characterization and Monitoring

- **Tests : environmental**, **vacuum**, **mechanical**, **radiations** ionizing dose and non-ionizing dose
- Optical (UV, Visible, IR), electrical (noise, RF and BF), environmental (moisture, relative humidity, random vibration, mechanical shocks, thermal cycling under vacuum, …) **characterization and performance monitoring**
- **Reliability** : MTTF *(*Mean Time To Failure), FIT (Failure In Time)

Integration and storage

- **Control** and report before shipment
- **Storage** in control environments with periodic characterization verifications
- **Obsolescence management**

Your components and systems from UV to Infrared...

- **Emitters**: laser diodes, LEDs, SLEDs,…
- **Receivers**: CMOS, CCD, phototransistors (single and matrix), photodiodes (single and matrix),...
- **Optical functions**: electro-optical modulators, transceivers, optocouplers, doublers,...
- **Fiber passive components**: couplers, Bragg grating, isolators, cables, multiplexers, filters, optical switch,…
- **Optical components**: Lens, mirrors, optical window,…
- **Optical** and **electrical connectors**
- **Subsystem and system optoelectronics and photonics**: **optical sources** and **detectors**,…

More information read the documentation AdvEOLab : Tests and Measurements of AdvEOTec

Engineering tests of your integrated optoelectronic systems

AdvEOTec **designs** and **develops** measurement and evaluation systems for optic, electronic, optoelectronic and photonic components and systems: **test benches**, **positioning systems**, **optical characterizations, integration systems**, **thermal and lighting simulator**…

AdvEOTec gathers the expertise of its experts, its assembly shop, modern laboratories and expertise of its teams and partners to design, implement and validate your test and measurement systems.

Research and development

- **System block diagram**
- Verification specifications subsets
- Feasibility validation, demonstration

Optical, electrical, mechanical and thermal design

- Design
- **Bill of material** (BOM)
- Modelling and design
- Schemes subsets of the system
- Definition of validation tests and recipes
- Evaluation of technological risks and simulations

Software engineering

- **Software definition** (IHM, algorithms ...)
- Acquisition and processing raw data
- Programming in **C++**, **C#**, **Visual studio, Labview**, **LabWindows**,… et microcontrollers
- **Automatizing standard equipment: sources, displacement sensors, TEC** (Thermoelectric Coolers),…
- **ATE** (Automatic Test Equipment),…

Procurement and control

- **Selection** and **follow-up** of **suppliers** and **subcontractors**
- Equipment procurement with verification and **control**

Production, assembly, installation and set up

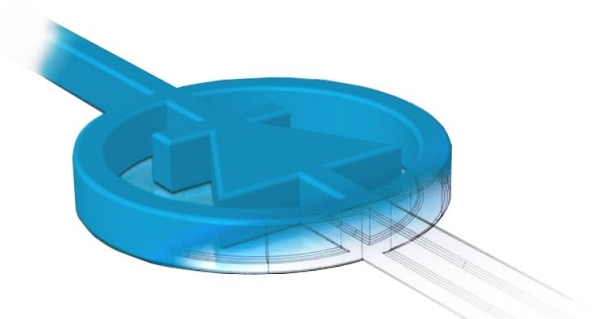
- Integration of the complete system
- Programming and **automation**
- Manufacture and validation subsets (PCB, thermomechanical support,…)
- **Development of** optical, electrical, optoelectronic, photonic, thermal, visions, dedicated **measurement and test systems**,…

Procedure, qualification and validation system

- Metrological validation
- Procedure validation

Training and implementation

- Manufacturing files, technical and user manuals, **certificates**,...
- Specific packaging (dry air, nitrogen,…)
- **Installation** at user site
- **Training and assistance to implementation**
- Maintenance program



OUR VALUE PROPOSITION

Experts and independent European laboratory
The flexibility of an SME
Over 10 years of expertise in optoelectronic components and in systems with optic, electronic and optoelectronic
Our methods and procedures have been audited and validated by our customers (Space, Aeronautic, Military, Telecommunications…).
Metrological testing **procedures**
Measurement processing & result analysis
The implementation of measurement benches and test facilities **dedicated to your application.**
A project manager for your program and a planning with milestones and deliverables
Management of technological risks
Technical and technological advices
Confidentiality!

OUR FACILITIES

Laboratory **400 m²**
More than 300 measurement systems, characterization and real-time monitoring systems (optical, electrical, thermal ...)
Primary and secondary vacuum chambers (storage and thermal cycling), a few dedicated to optoelectronics
Classroom environment 100 (ISO 5)
Laboratories comply with the IEC 61340-5-1&2 standards for ESD (Electro Static Discharge) protection.
Climatic chambers, damp heat storage, temperature cycling
Mechanical tests: constant acceleration test bench, PIND tester / vibrator, fiber pulling bench
ESD test equipment (Electrostatic discharge), COD (high optical power until optical failure)

R&D

FP7 and **French** (FUI, ANR) projects
Space projects**: Euclid, Taranis, Pharao, Chemcam**
Jasmin et Marise projects
Internal R&D programs
Other projects under non-disclosure agreement (NDA)

PARTNERSHIPS

We are able to perform mixed tests, we install and use our equipment in our partners' premises:
Mechanical tests: **vibration** and **shock**, **radiation test** (ionizing and non-ionizing dose), **cryogenic**, Electromagnetic compatibility (EMC), **physical analysis**: X-ray radiography, leak test, DPA,…

SOME REFERENCES

CNES, ESA, SAFRAN, BERTIN TECHNOLOGIES, AIRBUS GROUP / DEFENSE and SPACE , THALES, CEA, SAGEM, SODERN, AIRBUS, OPTOI, THALES-ALCATEL 3-5Lab, RADIALL, AMPHENOL, MBDA, …

COFOUNDING MEMBER OF

- **ISROS** : International Society on Reliability of Optoelectronics for Systems
- **Elyzee consortium :** multi-skilled group of companies, developing complete custom solutions, addressed to major industrial markets

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