



# Grenoble isère-france

## Imaging

### Grenoble-Isère achieves excellence in the field of imaging

➔ Grenoble-Isère-France is where the life sciences and the exact sciences come together. This dynamic area has been fertile ground for the life sciences over the past two years, with more than €400 million in investments. Various research projects, industrial development programs, and local initiatives targeting the life sciences have also been rolled out, including NanoBio, which will see €41 million in investments over six years. These investments are in addition to funding for the micro- and nanotechnologies sector, which has racked up €4 billion in investments, with another €3 billion to come in Grenoble-Isère alone.

Grenoble-Isère is well-established as a seedbed for innovation in the field of medical imaging. This capacity for innovation is supported by top-notch local research and industry, including:

- industry leaders such as Thales Electron Devices and Trixell,
- major research facilities like ESRF, Europe's brightest source of synchrotron light,
- significant strides in molecular biomarker and nano-optics research, resulting in the miniaturization of instrumentation and the use of imaging for medical assistance applications.

#### ➔ Leaders in academia and industry

CEA-Grenoble, CEA-Leti, CHU-Grenoble, Clinattec, CRSSA, DGTec, EMBL, Eras Labo, ESRF, Grenoble Institut des Neurosciences, IAB, IBS, ILL, Imag, Inria, ISIS Robotics, Movea, Noesis, Praxim, Scito, Sofradir, Thales Electron Devices, TimC, Trixell, UJF, Ulis, Xenocs,...

#### ➔ Major R&D initiatives

NanoBio, Minalogic, Lyonbiopole, Canceropole Lyon Auvergne Rhône-Alpes, Rhône-Alpes Genopole.

NanoBio: innovation cluster focusing on biology and healthcare applications for the micro- and nano-technologies. NanoBio will bring in innovative businesses and research teams in the field to participate in common research projects.



### ➡ **Imaging: from diagnostics to therapeutic applications**

Grenoble-Isère is home to global leaders in medical imaging and diagnostics, to a medical beamline using synchrotron light, and to an imaging platform dedicated to small laboratory animals.

### ➡ **Imaging: from detection to scientific instrumentation**

Major international research facilities such as ESRF and ILL provide images at extremely small scales. Advances in nanotools (molecular biomarkers, nanocrystals, and biophotonics) allow the miniaturization of detection devices. The field of instrumentation benefits from developments in optical microscopy.

### ➡ **Imaging: data and image processing**

The robotization of processes has been automated and innovations have been introduced in data and image processing (from academic research to start-ups and major industrial corporations).

### ➡ **Imaging: computer-assisted surgery and medical robotics**

Innovations have been made in computer-assisted surgery for nano-neurosurgery applications. Advances have been achieved to help patients stay at home longer by providing remote medical monitoring via intelligent homes (remote medical care).

### ➡ **Unique interdisciplinary educational programs**

- Master's in Models, Images, and Instruments in Medicine and Biology
- Doctorate in Biomedical Imaging
- Master's in Image Engineering and Computer Aided Design

### ➡ **Flagship projects**

- **Small-animal imaging platform:** photonic microscopy and cellular imaging for small laboratory animals - IAB, Inserm, Rhône-Alpes Genopole.
- **ESRF medical beamline:** center for clinical experimentation using synchrotron light to develop medical imaging and X-ray radiation therapy applications - Inserm, ESRF.
- **Clinatec:** experimental clinic for the use of nanotechnologies in neurosurgery - CEA, Inserm, Grenoble University Hospital.
- **Minalogic/Surgimag:** computer-assisted surgery station - Praxim Medivision, Alpwise, Cedrat, Movea, Saxxo Technologies, CEA-Leti, TimC laboratory, Grenoble University Hospital.
- **Minalogic/Imalogic:** digital imaging devices for medical radiology and infrared imaging - Sofradir, STMicroelectronics, Trixell, Ulis, CEA-Leti.
- **VisaDom:** a link between home-based patients and a remote medical monitoring service for remote medical assistance - Grenoble University Hospital.

## **A range of dedicated facilities available for your project**

➡ **Biopolis:** biotechnologies business incubator that offers the use of common services and technological facilities including a molecular biology room, a cell culture room, and more.

➡ **Minatec - High Technologies Building:** this shared laboratory offers 10,000 square meters of workspace and clean rooms to corporate R&D teams striving to transfer technology in the micro- and nanotechnologies.



### **Agence d'Etudes et de Promotion de l'Isère**

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