

Postdoctoral position: “Programmable 3D Self-Assembly of Quantum Gold Clusters for Selective Cancer Theranostics”

The **THERA-GOLD project** funded by EUR CBS (ANR-17-EURE-0003) aims to achieve precise spatial and temporal control over the self-assembly of quantum gold clusters (QGCs), ultra-small photoluminescent gold nanoparticles with therapeutic potential. By combining bioorthogonal chemistry with biospecific supramolecular interactions, the project will develop programmable QGC assemblies and investigate how multivalent architectures can enhance selective binding to biomimetic surfaces and cells. It will also examine QGC self-assembly directly in biological environments and characterize the resulting photothermal responses. Bridging together physical chemistry, biophysics, and biology, the project builds on expertise in nanomaterial synthesis, surface and biomacromolecular chemistry, advanced characterization, microfluidics, and cellular studies. The overall goal is to establish *programmable, highly selective nanostructures with strong potential for biomedical applications and more specifically in oncology.*

Within this project, the post-doctoral researcher will be involved in the synthesis of QGCs and the development of their controlled assembly. The morphology, size and optical properties of these assemblies will be assessed by spectroscopic and microscopy techniques in solution and on model surfaces. Their formation, localization, and photothermal properties will then be investigated in cellular environment using advanced optical microscopy.

The successful candidate will work in a multidisciplinary environment alongside chemists, biologists and engineers. The position will be based in **Grenoble (France)**, offering an *outstanding, collaborative scientific environment in the heart of the Alps*, between the Department of Molecular chemistry for the chemistry aspects and the Institute for Advanced Biosciences for the biological studies, two sites located in close proximity (UGA-CNRS).

Applicant profile:

We are looking for a motivated and enthusiastic postdoctoral candidate with 1 to 3 years of experience and a background in fields related to nanochemistry and biotechnology. Skills in spectroscopy, surface characterization and cellular imaging will be a plus but is not mandatory.

Salary: up to €4,690 gross per month (depending on experience) + €45 health insurance + €55 transport allowance

Application:

The candidate should send a cover letter, CV, grade transcripts, and recommendation letters to Dr. Xavier Le Guével and Dr. Galina Dubacheva. If you have any further question, do not hesitate to contact us:

Xavier Le Guével: xavier.le-guevel@univ-grenoble-alpes.fr

Galina Dubacheva: galina.dubacheva@univ-grenoble-alpes.fr

Duration: 2 years

Starting date: September 2026

Location: Grenoble, France



CBH Graduate School
Université Grenoble Alpes

