

**Position:** Post-Doctoral Fellow

**Laboratory:** Laboratory Light, nanomaterials & nanotechnologies - L2n, University of Technology of Troyes (UTT) & CNRS ERL 7004, <https://recherche.utt.fr/light-nanomaterials-nanotechnologies-l2n>

**Project:** The Laboratory L2n at University of Technology of Troyes is currently seeking a highly motivated postdoctoral fellow to work on “*Photochemistry and photophysics of Plasmons towards fully COntRolled Nanolocalized polymerization*” program, recently funded by the Agence Nationale de la Recherche (ANR) program. The post-doctoral fellow will be supervised by Professor Pierre-Michel Adam and Professor Renaud Bachelot in UTT.

The candidate is required to have a strong background in Surface Enhanced Raman scattering (SERS), optics (lasers, lenses, filters, and detectors), microscopy and spectroscopy (Raman scattering). The candidate is also required to have practical knowledge of Lumerical FDTD and/or Comsol Multiphysics computational methods. PhD degree with expertise in the following topics is required: optical physics, plasmonics, SERS, computational modelling and analysis.

The postdoctoral fellow will join a consortium of four teams of researchers from CEA (Paris-Saclay), University of Technology of Troyes and University of Mulhouse. The research program involves dynamic collaborations between the different partners of this consortium.

The successful candidate is expected to start early 2022, ideally as soon as 1st of march 2022. His/her primary responsibility will be to perform SERS experiments in order to monitor the surroundings of metallic nanoparticles: (1) measure the plasmon induced heating (through the analysis of the Stokes and anti-Stokes vibrational modes) (2) monitoring the local photochemical reactions by (a) conventional Raman scattering spectroscopy and (b) the development of a two-color continuous wave (CW) pump-probe Raman scattering spectroscopy method.

Specifically, the candidate will:

- ❖ Get familiar and trained with the multi wavelengths Raman microscope and all its accessories, including polarization elements in both illumination and collection paths, as well as Stokes and anti-Stokes Raman configurations
- ❖ Propose and develop a two-color CW pump-probe Raman setup
- ❖ Deliver clear written and oral presentations of data, analysis, and internal/external reports, including preparation of high-quality manuscripts for publications in internationally renowned journals
- ❖ Present her/his work at national/international conferences
- ❖ Communicate effectively with partner scientists and engineers, deliver and report on project progress
- ❖ Assist with various organizational activities including coordinating of regular research meetings, workshops, and conferences

Interested candidates are encouraged to send their detailed CV, 3 publications, and 3 referees' contact information to Professor Pierre-Michel Adam at pierre\_michel.adam@utt.fr and Professor Renaud Bachelot at renaud.bachelot@utt.fr