

Assistant Professor position at IPCMS, Strasbourg (dead line March 29th 2024).

The IPCMS wishes to recruit an assistant professor (MCF) to strengthen its research potential in the field of calculations and numerical simulations for Condensed Matter. Electronic structure calculations based on first principles are indeed powerful predictive tools and complementary to experimentation in many areas identified as priority research axes of the laboratory, such as molecular materials for spintronics and nanoelectronics, two-dimensional materials and their heterostructures for optics and photonics, or oxides for photovoltaics and multifunctional devices. The recruited person must have solid experience in the field of density functional theory (DFT) and be able to adapt existing codes such as ABINIT, VASP, CP2K, Quantum ESPRESSO, ABINIT, SIESTA, ELK or FLEUR to the laboratory's issues. The ab initio methods desirable in this context include out-of-equilibrium Green's function theory necessary for treating electronic transport, Hubbard corrective potential (DFT+U), DMFT essential for accounting for effects related to charge localization, especially in oxides, or time-dependent DFT (TD-DFT) or GW-BSE to treat phenomena related to light absorption. The MCF will join the Magnetism and Nanostructured Objects Department (DMONS) and contribute to one or more of the research axes developed there, such as quantum transport, spin-dependent or spin-independent, optical and ferroelectric properties of functional oxides, proximity effects in devices combining two-dimensional materials and nano-magnets, or excitonic dynamics in van der Waals heterostructures. He/she will also work closely with the "Simulation & Modeling of (Nano)Complex Materials" team of the Surfaces and Interfaces Department (DSI) to complement IPCMS's expertise in multiscale modeling of materials. In this context, he/she will ideally be able to develop the necessary interfaces to combine DFT, GW, DMF, and large-scale atomistic simulation methods (Molecular Dynamics, Monte Carlo). The MCF must be able to teach all physics courses in both the undergraduate (in French) and master's (in English) programs. For more information, contact Dietmar Weinmann (dietmar.weinmann@ipcms.unistra.fr). You can also view the job application on the French higher education webpage: https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/ListesPostesPublies/ANTEE/2024_1/0673021V/FOPC_0673021V_4954.pdf