PhD position on experimental chiral integrated photonics

Nanophotonics Technology Center

(Universitat Politècnica de València, Spain)

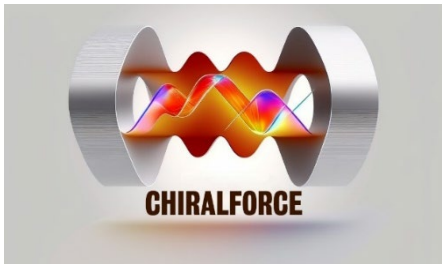
Separating enantiomers is crucial to produce bio-active molecules, e.g., in early-phase drug discovery. The present solution of chiral chromatography for this USD multi-billion market is slow and cumbersome since it requires tailored chemistry for each chiral compound and relies on large and expensive separation columns. The EU Pathfinder project CHIRALFORCE will develop a radically new strategy to separate enantiomers on photonic chips: using optical forces in chiral silicon-based integrated waveguides.

We are offering a PhD position at the Nanophotonics Technology Center (https://ntc.webs.upv.es/) to work in the fabrication, and characterization of chiral circuits in silicon-photonics integrated technology. The final goal is the observation of chiral optical forces exerted by such circuits on nanoparticles and molecules in liquid environments as well as the separation of enantiomers via optical forces on a chip. Research activities will be performed within the European project CHIRALFORCE (www.chiralforce.eu) and in collaboration with different European institutes, universities, and companies.

Candidates must have a degree in physics or electrical/telecommunications engineering. Other profiles (chemistry) may be considered. Master studies related to optics and/or nanotechnology will be very valuable. A high level in English is mandatory. Salaries will be according to FPI/FPU grants.

If interested, send a motivation letter (1 page) and a short CV to Prof. Alejandro Martínez (amartinez@ntc.upv.es) and Ms. Isabel Salas (misalas@ntc.upv.es).

Application deadline: March 31st, 2024

Additional information on the group: Plasmonic, Optomechanics and Chiral photonics

Location: https://ntc.webs.upv.es/contacto/