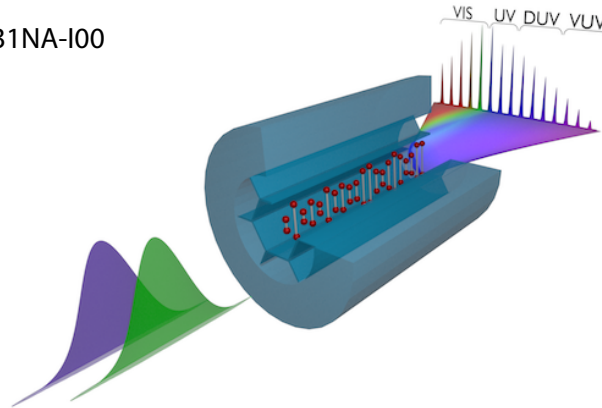


**Project title:** Portable ultraviolet coherent light sources based on anti-resonant fibres (PULSARS)

**Project ID:** PID2021-123131NA-I00



**Synopsis:** Ultraviolet (UV) light plays a key role in many disciplines such as spectroscopy, chemistry, biology or materials science, since all molecules in nature feature outer-shell electronic excitations in this spectral domain. The development of efficient coherent UV sources is however very complex since most materials are either highly dispersive or opaque in the UV. This implies that most applications requiring bright, widely tuneable UV light below 300 nm in wavelength usually rely on building-scale sources such as synchrotrons due to the lack of viable compact alternatives, and this is largely inconvenient and has severely hampered progress in many fields.

Our vision and the aim of the project is to revolutionise many multidisciplinary fields of research, both fundamental and applied, with the demonstration of small footprint, efficient tuneable sources of UV radiation in the 100 – 300 nm range. To do so, we will resort to tailored nonlinear light-gas interactions in specialty gas-filled optical fibres guiding light in a hollow core. This project involves both experimental and theoretical work, and lies at the interface between nonlinear fibre optics, molecular physics and laser science.

**Profile of the candidate:**

- Undergraduate background: Degree in Physics, Engineering Physics, Telecommunications or similar. M.Sc. in Photonics, Laser Science, Quantum technologies or similar
- Good programming skills (preferably with Python and Matlab)
- Excellent command of the English language (both written and spoken)
- Positive attitude towards working in a multidisciplinary environment
- Willingness to travel and spend time abroad

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**Deadline for applications:** 12/01/2023 – 26/01/2023

**Application site:** <https://www.aei.gob.es/convocatorias/buscador-convocatorias/ayudas-contratos-predoctorales-formacion-doctoresas-2022>