

## **Study of reconfigurable metamaterials in all-opto logical integrated chips applications**

### Project Description:

Metamaterial is a new type of material that has appeared since the 21st century. It has excellent electromagnetic properties and can effectively control the amplitude, direction, polarization, wavelength, and phase of electromagnetic waves. Reconfigurable metamaterials can precisely control the optical field behavior, so that they can provide a platform with flexible, stable, and fast response time characteristics, which has been widely concerned in many applications, and has become a research hotspot in the field of optics. This project is committed to in-depth research on the application of reconfigurable metamaterials in all-opto logical integrated chips, covering multiple application scenarios such as information and coding, highly sensitive sensing and detection, and communication systems. Our goal is to improve the electromagnetic response characteristics of metamaterials through these studies, and to lay a foundation for the wide application of metamaterials.

### Job Description:

We are looking for two well-grounded, self-driven research assistants who are interested in electromagnetic metamaterials and MEMS and are willing to carry out research work. The ideal candidate should have a relevant background in electromagnetics, physical optics, micromachining processes, and be interested in MEMS reconfigurable metamaterials. Candidates will work on design simulation and process fabrication realization, publishing relevant academic papers in prestigious journals through close collaboration with team members. Through the Focused Research Extension Program (FREE), candidates will have the opportunity to acquire the professional and practical skills needed to carry out research work, thereby increasing the likelihood of being approved for a doctoral or master's degree program and securing a long-term job in industry. The position begins in early 2024 or later and is expected to begin work no later than fall 2024. The appointment period is two years, and the contract is renewed annually.

### Qualifications:

- Master's or bachelor's degree in electronic information and engineering, electronic science and technology, optical engineering, microelectronics, integrated circuit and information engineering, etc.
- Experience in simulation design, micromachining process and device fabrication.
- Skilled use of common tools in optical simulation and MEMS development (such as MATLAB, LUMERICAL, COMSOL, ANSYS, LEDIT, KLAYOUT, ORIGIN, etc.).