

INTELLECTUAL VENTURES®

TITLE: Metamaterials Scientist, ISF Lab

LOCATION: Bellevue, WA

The Invention Science Fund (ISF) is developing a revolutionary technology based on optical holographic metasurfaces. ISF seeks a highly skilled, motivated Metamaterials Scientist to lead efforts in optical metamaterials theory and simulations as part of the Optical Technologies program. The successful candidate will report to the Director for Optical Technologies of ISF and be responsible for theoretical aspects of optical metasurface design, and for working closely with the engineering team.

ISF is a part of Intellectual Ventures, a privately-held invention investment company based in Bellevue, Washington. Driven by the belief that invention sparks progress, we're committed to creating and sustaining a market for invention through innovation, partnership, licensing and sales programs.

Responsibilities:

- Develop analytical theory and electromagnetic simulations of proprietary optical holographic metasurface technology developed at ISF
- Work closely with engineering team to develop prototypes of optical metasurfaces, demonstrating key functionality, working towards commercialization
- Develop a library of simulation tools in programs such as Comsol Multiphysics and Lumerical
- Develop analytical tools for holographic metasurface design based on methods such as discrete dipole approximation
- Develop theoretical and empirical optimization methods of metasurface performance
- Develop image reconstruction algorithms based on computational imaging and compressive sensing techniques

Key Qualifications and Required Skills:

- Ph.D. in physics, electrical engineering, optics, or related field
- 7+ years of experience in electromagnetic theory and simulations of metamaterials and nanophotonics
- Extensive experience with electromagnetic simulation tools such as Comsol or Lumerical
- Deep knowledge of metamaterial and metasurface design, including retrieval methods and discrete dipole approximation
- Experience with holography and applications to metasurfaces
- Ability to interact with engineering team and translate theoretical and simulations insights into practical designs
- Ability to work in small, very fast-paced team

Desired skills:

- Experience with computational imaging and compressive sensing techniques, such as ghost imaging
- Experience with optical system design and with optical simulation tools such as Zemax

Contact:

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We are an equal opportunity employer