Opportunity Title: Reconfigurable Broadband RF Metamaterials
Opportunity Reference Code: ICPD-2020-26

Organization Office of the Director of National Intelligence (ODNI)

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How to Apply

Create and release your Profile on Zintellect – Postdoctoral applicants must create an account and complete a profile in the on-line application system. **Please note: your resume/CV may not exceed 2 pages.**

Complete your application – Enter the rest of the information required for the IC Postdoc Program Research Opportunity. The application itself contains detailed instructions for each one of these components: availability, citizenship, transcripts, dissertation abstract, publication and presentation plan, and information about your Research Advisor co-applicant.

Additional information about the IC Postdoctoral Research Fellowship Program is available on the program website located at: https://orise.orau.gov/icpostdoc/index.html.

If you have questions, send an email to ICPostdoc@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 2/28/2020 6:00:00 PM Eastern Time Zone

Description

Research Topic Description, including Problem Statement:

Despite several advances in development of metamaterials operating in the radio frequency range, devices are still limited in bandwidth and have limited reconfigurable performance.

Metamaterials provide unprecedented capability to control electromagnetic radiation, however there has been limited development in radio frequency metamaterials exhibiting truly broadband operation, as well highly reconfigurable performance. Novel materials and metamaterial design platforms that would enable fully reconfigurable optical devices are desired.

Example Approaches:

Improve bandwidth and reconfigurable performance of radio frequency metamaterials: metamaterials, varactors, phase change materials, optically-driven control, and electrically-driven control. One approach could be to design new RF antennas with phase change materials incorporated into the device, providing reconfigurability across a broad bandwidth.

Relevance to the Intelligence Community:

Broadband and reconfigurable RF systems will enhance the Intelligence Community's ability to adapt and capture more mission-relevant data.

Key Words: Radio Frequency, Microwave, Metamaterials, Reconfigurable, Tunable, Broadband

Qualifications

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Postdoc Eligibility

- U.S. citizens only
- Ph.D. in a relevant field must be completed before beginning the appointment and within five years of the application deadline
- Proposal must be associated with an accredited U.S. university, college, or U.S. government laboratory
- Eligible candidates may only receive one award from the IC Postdoctoral Research Fellowship Program

Research Advisor Eligibility

- Must be an employee of an accredited U.S. university, college or U.S. government laboratory
- Are not required to be U.S. citizens

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (2 👁)
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (45 👁)
  - **Mathematics and Statistics** (10 👁)
  - **Other Non-Science & Engineering** (2 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)
  - **Social and Behavioral Sciences** (27 👁)