

Opportunity Title: Innovative Future High Performance Microelectronics Technologies – More Than Moore’s Law
Opportunity Reference Code: IC-17-17

Organization Office of the Director of National Intelligence (ODNI)

Reference Code IC-17-17

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.

Application Deadline 3/31/2017 11:59:00 PM Eastern Time Zone

Description **Research Topic Description, including Problem Statement:**

Conventional two dimensional silicon based microelectronics have reached the end of Moore’s Law (i.e., performance doubling every 24 months). This greatly limits improvements to electronic system capability and performance. New innovative approaches such as 3D structures, non-silicon materials (graphene, phosphene, molybdenum disulfide...) etc. are needed to ensure future performance continues at the same pace has been enjoyed for the past several decades.

Example Approaches:

Successful proposals could explore new and innovative approaches for high performance microelectronics that will increase the performance and capability of future satellites and ground systems. Areas of interest that could be explored to provide the high performance, low power consumption, radiation tolerant microelectronics critical for space applications might include:

- graphene
- phosphene
- molybdenum disulfide
- wide bandgap technologies
- 3D packaging

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Business** ([11](#))
 - **Chemistry and Materials Sciences** ([12](#))
 - **Communications and Graphics Design** ([6](#))
 - **Computer, Information, and Data Sciences** ([16](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))



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Technologies – More Than Moore’s Law

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- **Life Health and Medical Sciences** ([45](#))
- **Mathematics and Statistics** ([10](#))
- **Other Non-Science & Engineering** ([13](#))
- **Physics** ([16](#))
- **Science & Engineering-related** ([1](#))
- **Social and Behavioral Sciences** ([28](#))