Nanopillar Arrays For Secondary Electron Emission

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The Invention

The present invention provides systems, devices, device components and structures for modulating the intensity and/or energies of electrons, including a beam of incident electrons. In some embodiments, for example, the present invention provides nano-structured semiconductor membrane structures capable of generating secondary electron emission. Nano-structured semiconductor membranes of this aspect of the present invention include membranes having an array of nanopillar structures capable of providing electron emission for amplification, filtering and/or detection of incident radiation, for example secondary electron emission and/or field emission. Nano-structured semiconductor membranes of the present invention are useful as converters wherein interaction of incident primary electrons and nanopillars of the nanopillar array generates secondary emission. Nano-structured semiconductor membranes of this aspect of the present invention are also useful as directed charge amplifiers wherein secondary emission from a nanopillar array provides gain functionality for increasing the intensity of radiation comprising incident electrons.

Additional Information

For More Information About the Inventors

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Tech Fields

- Engineering : Micro & nanotechnologies

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854