OAK RIDGE NATIONAL LABORATORY
Managed by UT-Battelle for the Department of Energy

Cesiated Carbon Nanoflakes Field Emitter Array Infrared Imager

Disclosure Number

200501605

Technology Summary

This invention disclosure describes the development of a new infrared sensor based on cesium-doped carbon nanoflake structures. The field emission current of each cesiated carbon nanoflake structure is modulated by the incident infrared photon energy. Significant modulating current can be obtained with infrared energies around 3um and at a responsivity approaching that of wavelength-responsive, cryogenically cooled systems. The ease of growing small film diameter (a few microns) carbon nanoflakes implies that pixel sizes that are much smaller than that of current IR cameras (typical sizes are ~ 50ìm) can be fabricated. This will enable the manufacture of much higher resolution cameras.

Inventor

KISNER, ROGER A

Engineering Science & Technology Div

Licensing Contact

SPEIGHT II, MELVIN D
UT-Battelle, LLC
Oak Ridge National Laboratory
Room 143, 4500N, MS: 6196
1 Bethel Valley Road
Oak Ridge, TN 37831

Office Phone: (865) 241-6564
E-mail: DSPEIGHT@ORNL.GOV

Note: The technology described above is an early stage opportunity. Licensing rights to this intellectual property may be limited or unavailable. Patent applications directed towards this invention may not have been filed with any patent office.