

PhD THESIS DEFENSE: Colloidal Quantum Dots Based Bolometer

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March 11, 2024
11:00
ICFO Auditorium

Bolometer technology, crucial for uncooled thermal detection in thermography, industrial inspection, monitoring, surveillance application, relies on materials requiring sophisticated instrumentation for their growth and fabrication. The events of COVID-19 and the recent Nobel Prize in chemistry have underscored the need of low cost and easy to handle thermal imaging technology, as well as the potential of Colloidal Quantum Dots (CQDs) for high performance optoelectronic devices, respectively.
This thesis, explores a new material platform based on CQDs, and studies the suitability of CQDs for the Infrared (IR) bolometer technology. Various components of a bolometer device such as a thermistor and a metamaterial absorber have been demonstrated with the use of CQDs, and a complete bolometer device fabrication have been achieved. The work presented in this thesis lays the groundwork and is anticipated to contribute to the

continuous advancement and improvement of uncooled IR sensing devices, paving the way for low-cost development and wider dissemination of IR bolometer technology.

Monday March 11, 11:00h. ICFO Auditorium.
Thesis Director: Prof Dr. Gerasimos Konstantatos
Hosted by: Prof Dr. Gerasimos Konstantatos