

## PRODUCING TIME-GATED LUMINESCENT IMAGES WITH LANTHANIDE ION LABELS(L14)

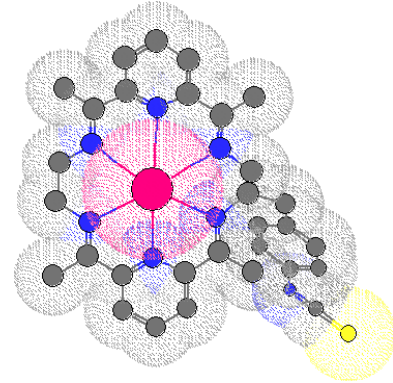
Robert C. Leif<sup>1</sup>, Sean Yang<sup>1</sup>, Dayong Jin<sup>2</sup>,  
and James A. Piper<sup>2</sup>

<sup>1</sup>Newport Instruments, 5648 Toyon Road,  
San Diego, CA 92115

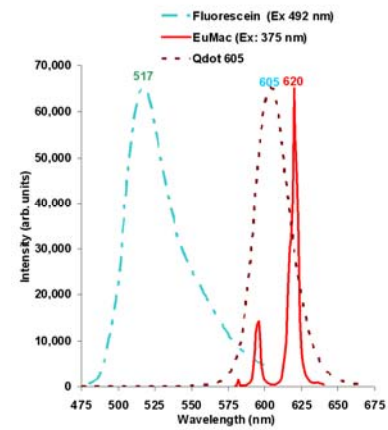
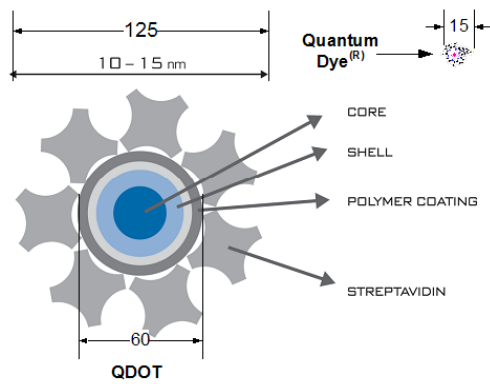
[www.newportinstruments.com](http://www.newportinstruments.com);  
[rleif@rleif.com](mailto:rleif@rleif.com)

<sup>2</sup>MQ Photonics Research Centre,  
Department of Physics and Engineering,  
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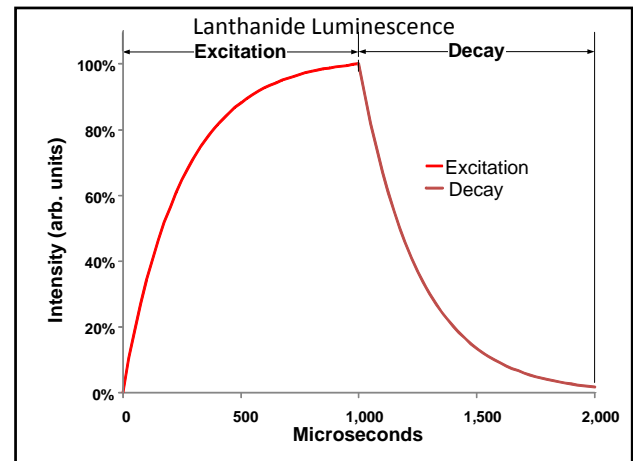
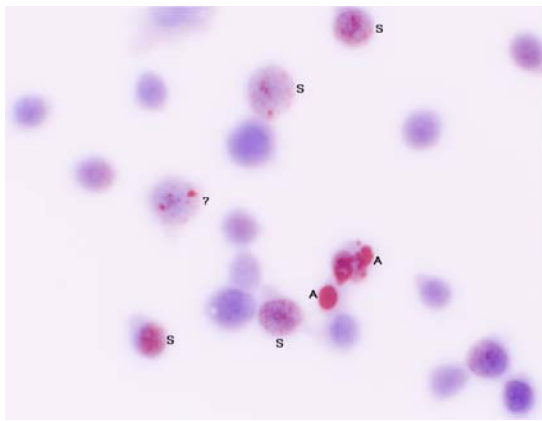
## 3D Image of the Europium Quantum Dye<sup>®</sup> monoisothiocyanate



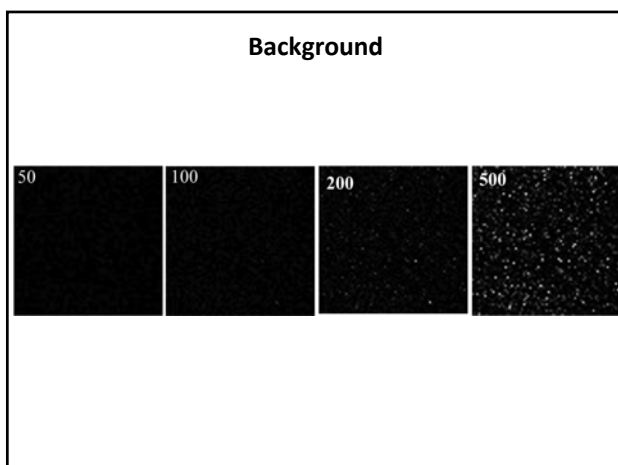
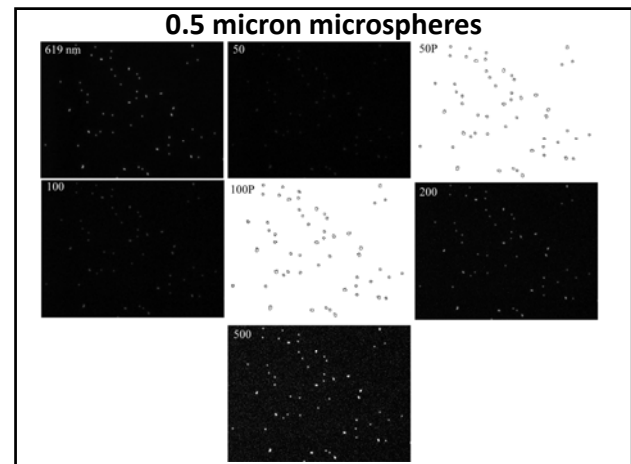
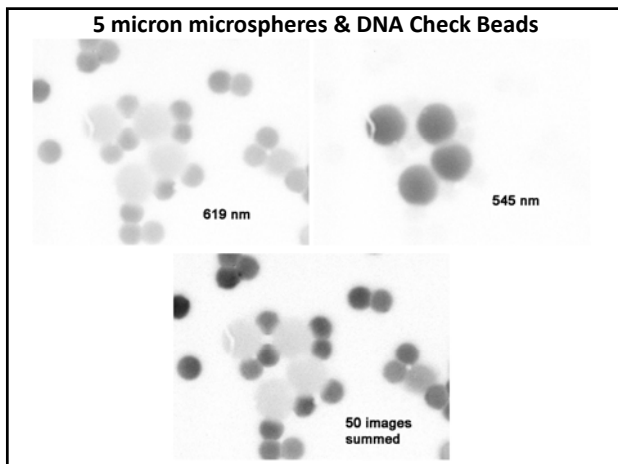
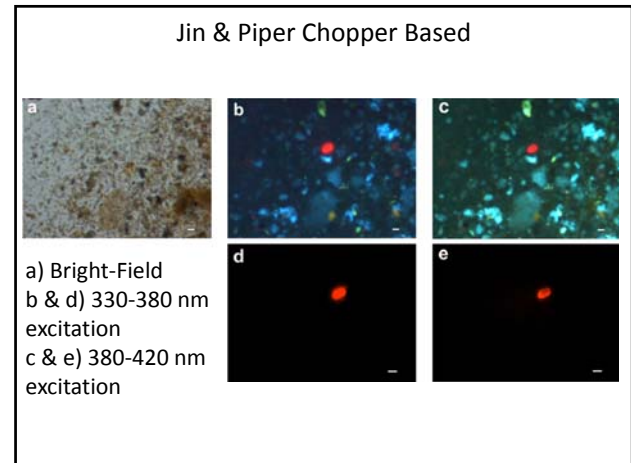
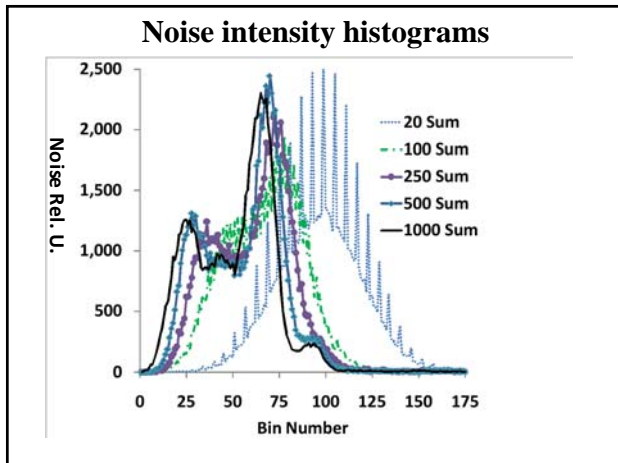
## Image of a QDOT & Quantum Dye<sup>®</sup>



## Image of Positive Control Apoptotic cells







- ### Conclusions
- Analog summation works
    - Noise generation because of lack of cooling is problem for weakly labeled samples.
  - software modification (remove loop) Mode 5 a cooled scientific grade camera with a UV LED would permit relatively inexpensive time-gated luminescence image acquisition measurements.
    - Otherwise use a shutter.
  - The use of lanthanide, background free labels is now both practical and desirable.