



PHOTOMETRICS®
HIGH PERFORMANCE EMCCD & CCD
CAMERAS FOR LIFE SCIENCES



CUSTOMER REFERENCE

Evolve™ 512 EMCCD Camera

Single Molecule Spectroscopy

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BACKGROUND

Research at Sussex University focuses on the development and application of ultrasensitive optical techniques for the detection and manipulation of single molecules. Representing the ultimate level of sensitivity in the analysis and control of matter, single molecule techniques have many advantages over conventional ensemble methods, namely the measurement of static and dynamic heterogeneity in molecular systems.

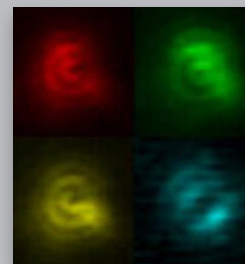
CHALLENGE

The lab uses TIRF imaging on customized laser microscopy platforms to investigate a diverse range of molecular systems, from protein-ligand interactions by dipole imaging and protein-protein interactions in yeast using PALM, to quantum dot (QD) activation and blinking. They set out to pursue a way to improve the quality of defocused dipole images, reduce uncertainties in the location of molecules in PALM and achieve reliable measurements of QD quantum yields.

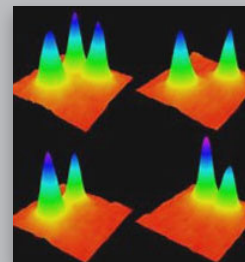
SOLUTION

The research team selected the Evolve 512 camera and are now using it for single photon counting and to support their diverse set of challenging imaging requirements. "The camera has performed exceedingly well under challenging and photon poor conditions," states Osborne. The team is also using Micro-Manager microscopy software for image acquisition and processing.

“The Evolve 512 EMCCD camera has performed exceedingly well under challenging and photon-poor conditions.”



Dipole images of a TMRbiocytin ligand oriented within a streptavidin protein nanoenvironment.



Intensity images of Quantum Dots undergoing fluorescence intermittency.

For more information about the research at Sussex University, visit:
<http://www.sussex.ac.uk/lifesci/osbornelab/>



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