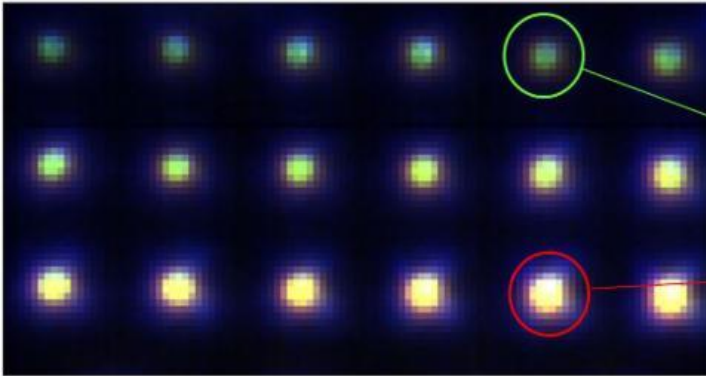


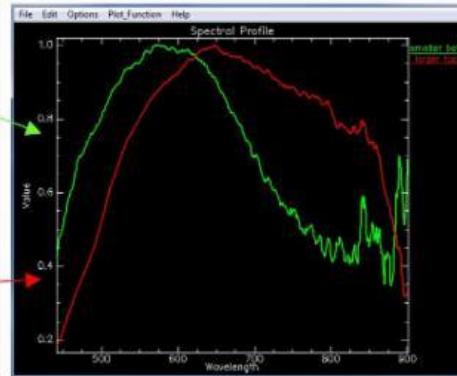
# Nanoarray Enhanced Darkfield Hyperspectral Imaging

The primary purpose of developing nanoarray patterns is the creation of systems containing unique optical and spectral properties for a wide range of materials and life science applications.

Having a fast method for observing these nanoarrays, while also easily measuring the optical spectrum at each point in the pattern, is critical. Without this capability, it is not possible to demonstrate the efficacy and consistency of your fabrication process across the array.



**Figure 1:** Enhanced darkfield hyperspectral image of a plasmonic nanoparticle array of varying sizes: 200x total magnification.



**Figure 2:** Spectral response of two different nanoparticles within the array.

CytoViva's Enhanced Darkfield Hyperspectral Microscopy has emerged as one of the most efficient and accurate methods for observing and measuring the optical spectroscopy of nanoarrays. The high signal-to-noise nature of oblique angle enhanced darkfield microscopy enables rapid observation of the plasmonic scatter or fluorescence emission properties from your nanoarray. Hyperspectral imaging captures a high resolution spectral image containing the reflectance spectrum within every pixel of the nanoarray sample. The spectrum contained in each nanoscale pixel of the image covers from 400 - 1,000 nm in the VNIR range or 900 - 1,700 nm in the SWIR range.

Standard broadband illumination is typically used to capture these hyperspectral images across a wide range of different fabricated nanostructures, including plasmonic, metal oxide, and even quantum dot materials. However, different illumination options including coherent light can be used. Depending on the magnification required, areas as large as 220  $\mu\text{m}$  square can be captured in as little as two to three minutes.

CytoViva's Enhanced Darkfield Hyperspectral Microscopy is utilized by hundreds of research groups around the world. Many of these groups are involved in fabrication of nanoarrays. Links to abstracts of recent publications focusing on hyperspectral imaging of plasmonic and quantum dot nanoarrays are listed below.

[\*Nanometers to centimeters: novel optical nano-antennas, with an eye to scaled production\*](#)

[\*Large-Area Multicolor Emissive Patterns of Quantum Dot-Polymer Films via Targeted Recovery of Emission Signature\*](#)

To learn more about CytoViva's Enhanced Darkfield Hyperspectral Microscopy or how it can help you with your nanoarray or related research, please contact us at [info@cytoviva.com](mailto:info@cytoviva.com) or visit our website [www.cytoviva.com](http://www.cytoviva.com). We will be pleased to discuss your research and test imaging of your samples.