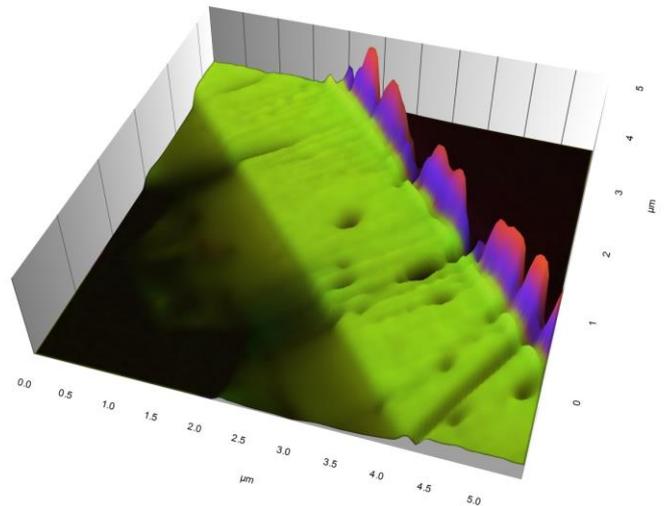
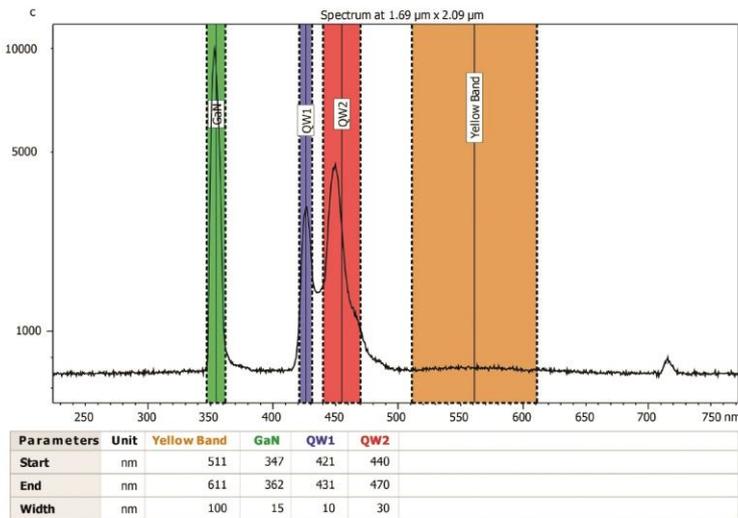




The Cathodoluminescence Revolution goes 3D

New AttoMap software brings 3D mapping of spectroscopic features on nanoscale objects

Lausanne, Switzerland and Besançon, France 19 November 2014 – New AttoMap software, based on Digital Surf’s Mountains Technology®, brings 3D imaging of spectroscopic information obtained using Attolight’s cathodoluminescence (CL) technology. Attolight’s CL technology integrates a scanning electron microscope and a light microscope into high resolution spectroscopy instruments used by global players to characterize semiconductors, solar cells and other nano devices. 3D visualization of spectroscopic information in AttoMap makes it easier for researchers and quality engineers to locate and characterize features and defects on these devices and other nanoscale objects.



Visualization of spectroscopic features on a gallium nitride light emitting diode (LED) obtained by Attolight’s high resolution cathodoluminescence technology. Left: band definition in AttoMap software; each band is associated to a relevant spectral feature (band edge, quantum wells, impurities). Right: 3D image of spectroscopic bands in AttoMap.

The Attolight CL microscope generates images containing up to 1600 colours. Visualising such images, called hyperspectral maps, is a real challenge since the human eye can only perceive the three primary colours, red, green and blue and mixtures of these colours.

AttoMap software brings a very powerful solution to this problem. First, it allows the user to convert relevant spectral bands into colours that he or she can perceive, such as red, green and blue. The software then automatically generates a 2D RGB image that is both friendly to the human eye and makes it easy for the user to see the location of specific spectral features. Finally, AttoMap transforms this image into a 3D map, where the third dimension corresponds to the cathodoluminescence intensity. It is a very convenient method for understanding how intense each spectral band is compared to other bands. This 3D map can be modified in real time to facilitate inspection.

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In addition to processing cathodoluminescence data, AttoMap works with images and surface data from a wide range of microscopes including scanning electron microscopes (SEM's), scanning probe microscopes (SPM's) and 3D optical profilers. It can colocalize images and data from different instruments for correlative studies. Working with measured or reconstructed 3D surface topography data it can be used for surface metrology applications, calculating areas, volumes, step heights and surface roughness parameters and carrying out 3D Fourier analysis, particles analysis, statistical analysis and more.

"AttoMap's 3D visualisation of hyperspectral images is an incredible way to quickly obtain a good understanding of a cathodoluminescence data set. It further widens the gap between Attolight and its competitors by providing a superior experience from measurement to data processing," stated Jean Berney, CTO of Attolight. "Furthermore it brings unparalleled analysis tools to correlate cathodoluminescence with complementary measurement methods such as EBIC, AFM, micro-photoluminescence or Raman."

"Attolight is a reference in cathodoluminescence technology and Digital Surf is proud to provide AttoMap software that includes a broad range of imaging, hyperspectral analysis and surface metrology functions from our Mountains Technology® software platform", stated François Blateyron, Chief Operating Officer of Digital Surf.

Attolight will unveil AttoMap at the MRS Fall Exhibit in Boston, Massachusetts, December 2-4, 2014.

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Attolight is a Swiss start-up company that develops innovative characterization tools and metrology solutions for research laboratories and the semiconductor industry. Attolight is the inventor of a measurement technique called quantitative cathodoluminescence, a non-destructive characterization method that yields nanometer scale spectroscopic data and provides a deeper understanding of material structures. Attolight's technology has a wide variety of applications in connection with the assessment of performance and reliability of LEDs, GaN power transistors, deep UV emitters, VCSEL, solar cells, and bio-sensors. The company also offers laboratory and testing facilities for contract service measurements. Address enquiries to: Olivier Gougeon (VP Sales & Marketing), olivier.gougeon@attolight.com

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Digital Surf, founded in 1989, specializes in providing surface imaging and metrology software for all types of surface metrology instrument including 2D and 3D profilometers, optical microscopes, scanning probe microscopes, scanning electron microscopes and hyperspectral instruments. Imaging and analysis software based on Digital Surf's Mountains Technology® is integrated by leading instrument manufacturers and is used in thousands of laboratories and industrial facilities working in numerous sectors including aerospace, automotive, biotechnology, cosmetics, energy, MEMS, materials research, medical, metallurgy, nanotechnology, optics, paper, PCB, plastics, polymers, printing, semiconductor, etc.

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