



ImTech Inc. Under Contract with Gene Tools

CORVALLIS, Ore., April 18, 2003 - ImTech, Inc. of Corvallis recently developed a prototype automated image analysis tool under contract for Gene Tools, which uses the device to detect UV fluorescent genetic markers. Optics design, filter and camera selection, as well as, image analysis software were critical to achieve the required ultra low-light image formation. Ken Trueba, physicist at ImTech, said, “the main challenge was elimination of noise in order to achieve this level of imaging sensitivity.” The team took a multi-faceted approach to overcome this challenge. Optics were designed for 10x magnification. To increase image contrast, filters were selected to first illuminate the fluor with a very specific UV wavelength and then to allow transmission of the specific wavelengths re-emitted by the fluor. A Peltier cooled CCD camera was selected to reduce thermal noise in the image. Then software algorithms were written to further increase the signal to noise ratio. The application included a redundant image capture and compare process, in which the sample is moved along a single axis while a sequence of images are captured. These images are then superimposed and compared to further isolate the real signal from the noise. Ultimate uses for the commercial product include gene expression in cancers, diagnostics for viral and other pathogens, and bio-warfare agent detection. Bill Buskirk, president of ImTech, said, “It was an intriguing project and it’s exciting to be involved at this early stage.”