Corporate Case Study

PRIOR®
Scientific

Development Of Waters Corporation DESI™ XS

Prior Scientific is known for developing and manufacturing cutting-edge microscope automation, working with OEMs and start-ups to help bring their concepts to market. This case study demonstrates Prior's imaging design and precision positioning capabilities outside the field of microscopy.

FIGURE 1. DESI™ XS - Open

A Lasting Partnership with Waters Corporation

Waters Corporation is a global pioneer of chromatography, mass spectrometry, and thermal analysis innovations. Their products are used in a wide range of applications, from drug development, confirming the integrity of chemicals used in production processes, to assuring that water supplies are safe.

When they decided to re-engineer their market-leading mass spectrometry imaging source, DESI, they wanted to offer their customers reliable, rapid imaging, with exceptional quality in a robust system that was both easy to set up and maintain. As well as making improvements to their Desorption Electrospray Ionization (DESI) technology in-house, the new source required highly accurate, precise positioning. Since this was a vital aspect of the reengineering, Waters decided to work with Prior Scientific as a development partner.

The result of this collaboration is the DESI XS, a highly successful product that offers Waters' customers a fully integrated source for simple and reliable mass spectrometry imaging.

Market Leading Experience

Prior has a long history of working with OEMs and other companies to help them develop new imaging products. For this project, Prior's team of designers and imaging automation experts worked closely with Waters' in-house design team to fully understand the needs of Waters' customers, and exactly how the technology would be used before creating an initial specification for the source.

Using their specialized equipment, Prior prototyped the early designs and tested these with Waters, working through a number of iterations until the final design was signed off.

FIGURE 2. DESI™ XS - Partially Sealed Housing

The Results

The resulting DESI XS incorporates one of Prior's cutting edge stepper motor stages. The stage was customized to allow for different holder types while its accuracy ensures reliable precise imaging. A partially sealed housing was created to increase stability, reduce atmospheric interference, meet compliance and safety requirements and give the product a modern design aesthetic.

Prior also worked with Waters engineers to develop specific communications firmware to fully integrate the imaging software and controllers.

Following the success of DESI XS, the team are now working on developing automation designs to allow for imaging high volumes of samples.

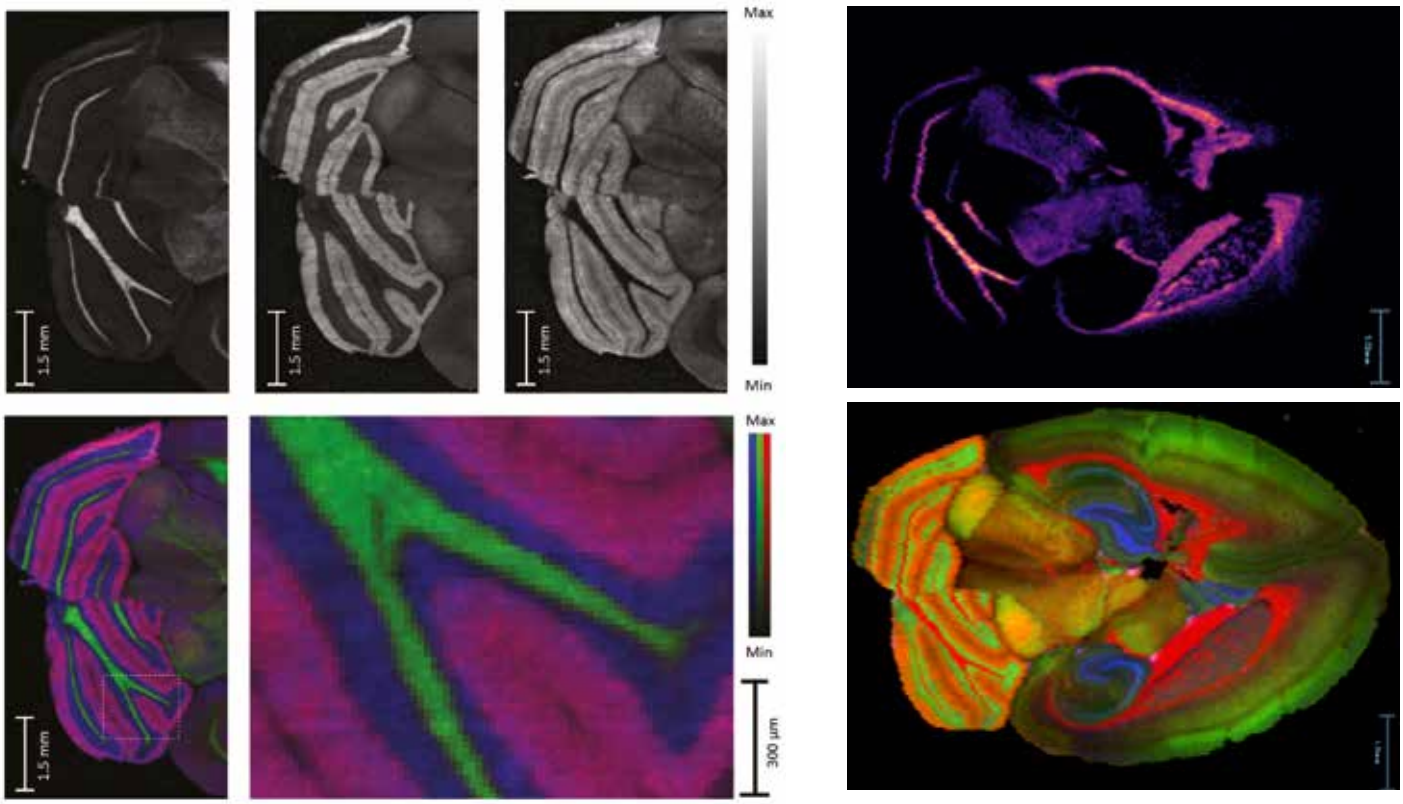

FIGURE 3. DESI™ XS - Bran Scans

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