Dr. M. Simard (Université de Montréal), S. Byram and E. Blanpied (both Bruker) in front of the D8 VENTURE with METALJET

"The D8 VENTURE with METALJET has been installed less than half a year ago and has already tremendously enhanced my group's and the university's capabilities in the analysis of single crystal samples.

X-ray facilities at the University of Montreal always focused on high-intensity sources. Prior to the arrival of the D8 VENTURE with METALJET we had systems in operation based on Cu rotating anodes or a Cu microfocus source, all using the best available optics. Despite certain doubts expressed by me and several colleagues whether the increase in brightness of the new source would compensate for the risks inherent in any new technology, we decided to opt for the first installation of a METALJET system in North America.
Six months after its installation, performance of the METALJET system has by far exceeded our expectations. The new metal-jet source coupled with the optimized multilayer optics is around 20 times brighter than current technology, and around 40 times brighter than our Cu rotating anode source, when operated at less than maximum voltage. As a consequence, since the arrival of the METALJET, our laboratory did not have to classify a single sample as "too weakly diffracting", a fact which still occurred for 3-5% of our samples even using multi-day measurements on Cu rotating anode or microfocus systems. The smallest crystal employed so far in data collection had a maximum diameter of 20 µm (organic compound with one bromide atom as the heaviest atom, absolute structure successfully determined). In addition to increased sensitivity, required measurement time reduced significantly. First structure solutions can be obtained from fast scans after 5-10 min, and even for the smallest crystals full sphere datasets were collected in less than 6 hours. In our hands the METALJET thus easily replaces two conventional Cu-based diffractometers.
The system has pushed the limits of our already high expectations towards crystallography. We re-gained the speed of data collection of Mo-based diffractometers with a sensitivity unparalleled even by Cu rotating anode sources and orders of magnitude above standard sealed-tube Mo systems. In the few months since its installation the instrument quickly became essential for the success of research programs here at the University of Montreal. This certainly also holds for projects of other researchers in Quebec, who benefit from our open facility."

Frank Schaper, Professor at the Department of Chemistry, University of Montreal, and Scientific Director of the X-ray Diffraction Laboratory

METALJET

- Tremendously enhanced SC-XRD capabilities

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Crystallography

Innovation with Integrity