

ACTOR gets an AGENT: Automation for Multiple Instruments

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Laboratory automation has improved the efficiency and capabilities of the modern crystallographer. To date, robotic methods are used for all steps of the crystallographic pipeline, from preparing solutions for crystal growth all the way to mounting crystals on goniometers and collecting diffraction data. Additionally, data processing has been automated to provide nearly immediate results to the scientist. With the need for crystal transport and data collection maturing, there has arisen the need to evaluate crystals and then choose to move collection worthy crystals to the most appropriate diffraction setup for full data set collection. ACTOR Gantry Enabling Numerous Targets, AGENT, has been added to the crystallographer's tool chest to fill this gap. AGENT allows ACTOR to mount crystals on multiple adjacent diffractometers. Crystals can then be evaluated, ranked, and, if they exceed a quality threshold, data can be collected. Based on the crystal diffraction properties, the best instrument and experimental parameters can be selected for data collection. Not limited to a single detector or generator, AGENT can outsource samples to multiple detectors on multiple generator platforms. Thus, AGENT provides the ultimate in high-throughput technology, while still retaining the scheduling flexibility required for optimal crystallographic data collection.

Keywords: automation, robots, structural genomics