

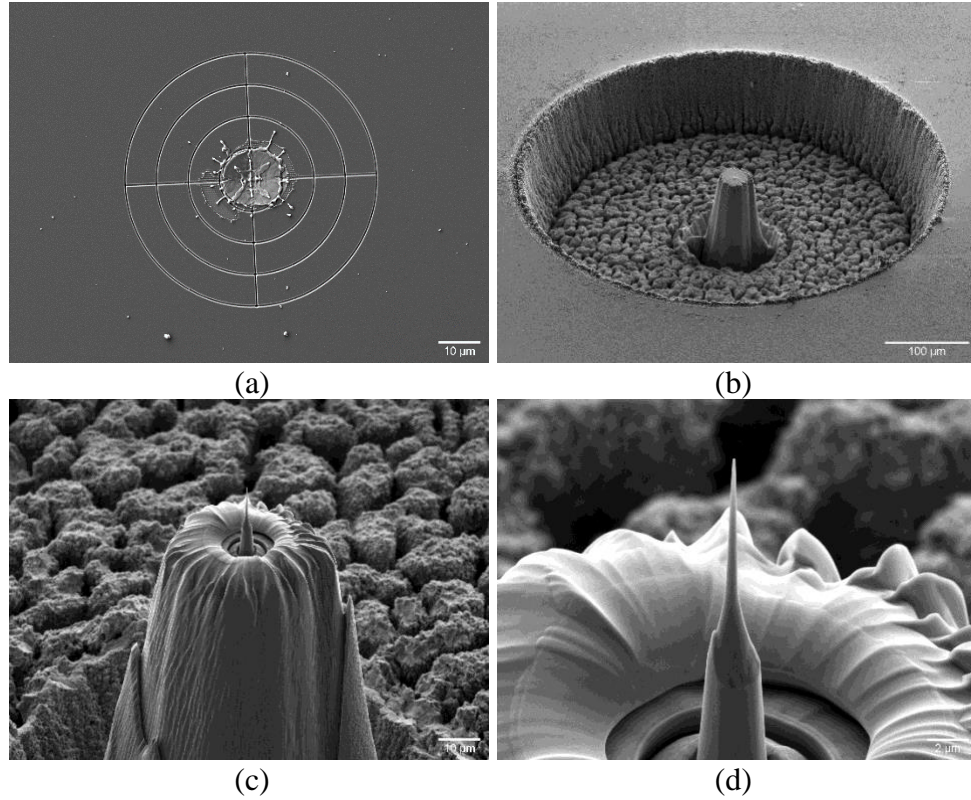
# FIBSEM laser Enabled Sample Preparation

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Analytical characterization techniques require highly precise and efficient specimen preparation to ensure validity of individual results as well as provide robust statistical relevance between experiments. The combination of Ga<sup>+</sup> FIB and f<sub>s</sub> laser on an integrated SEM platform offers rapid and site-specific material removal capability across length scales, under a controlled processing environment. Advantages of the ZEISS Crossbeam laser system will be presented in context of various downstream workflows including atom probe tomography, in situ micromechanical testing, nano-computed tomography, electron backscattered diffraction, and TEM lamella prep. The benefits of such a multi-modal tool will be compared to standalone instruments as it relates to quality of the specimen produced and time to result for the overall processing pipeline.



*Figure 1: APT Sample Preparation: Stages of pillar preparation for atom probe tomography (APT) analysis showing; (a) Ga+ FIB milled pattern for laser calibration, (b) large volume laser machining for moat preparation, (c) Ga+ FIB milling for initial pillar shaping, and (d) Ga+ FIB polishing for final pillar shaping.*