

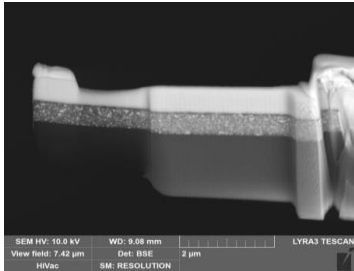
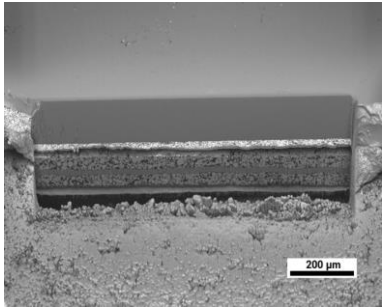
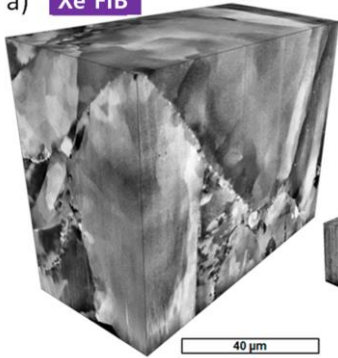


## COMPARISON TABLE OF SEM

MAKER	TESCAN	
FIB Type	Ga FIB	Xe Plasma FIB
MODEL	<p>Demo S9000G</p> 	<p>DEMO AMBER X</p> 
SEM Resolution	0.7nm at 15kV	0.9nm at 15kV
	1.0nm at 1kV (BDM)	1.3nm at 1kV (BDM)
SEM Probe current	2pA ~ 400nA	2pA ~ 400nA
FIB Column	Orage™ High-resolution Ga FIB column	i-FIB+™(Xe Plasma column)
Source	Ga Ion Source	Xe Ion Source (Noble Gas)
	Xe Plasma FIB: Xe Ion Source (Noble Gas), which minimizes sample damage by about 20%-40%.	
Source Life Time	about 1500 hours	about 5 years
	Ga FIB: Approximately 1500 hours, requiring reservoir replacement. Xe Plasma FIB: Uses inert gas, with a lifetime of over 5 years.	
FIB Resolution	2.5nm at 30kV	12 nm at 30kV
FIB current	1pA ~ 100nA	1pA ~ 3uA
	Xe Plasma FIB offers around 50x faster milling speed than Ga FIB, making it more suitable for wide and deep areas and 3D work.	

Atomic Mass	69.74	131.3
	<p>The atomic mass of Xe (131.30) is approximately twice that of Ga (69.74). As a result, the FIB milling rate increases proportionally, allowing for faster material removal per unit of time when using Xe Plasma compared to Ga. This makes Xe Plasma FIB more efficient for milling larger areas or performing tasks that require higher throughput.</p>	
Applications	<p>Thin TEM sample work (10<math>\mu</math>m x 50nm) Fine area cross-section milling 3D micro-area work (Tomo, EDS, EBSD)</p>	<p>Large-area milling (&gt;1mm) TEM sample work (20<math>\mu</math>m x 80nm) Large-area 3D work (Tomo, EDS, EBSD) Suitable for hard material samples (SiC)</p>
	<p>Ga FIB is ideal for TEM sample preparation and micro-area analysis, but Xe plasma FIB is more efficient for large-area milling, enabling fast processing of areas over 100<math>\mu</math>m.</p>	
	<p>TEM Sample Size: ~5<math>\mu</math>m for Ga FIB.</p> 	<p>Cross-section Size: &gt;1mm for Xe Plasma FIB.</p> 
	<p>A</p> <p>a) Xe FIB</p>  <p>b) Ga FIB</p> 