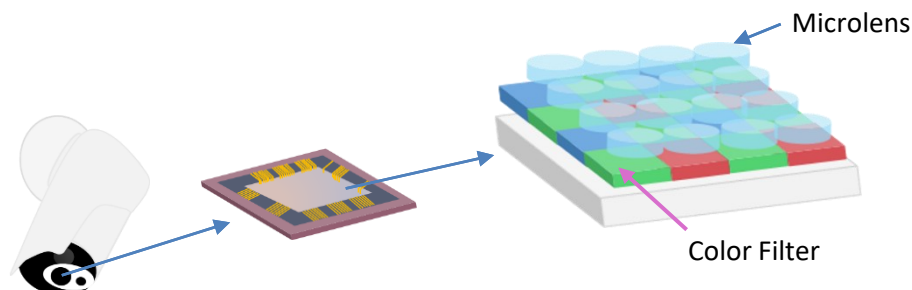


Preparation of Cross-Sectional SEM/TEM Samples Using FIB

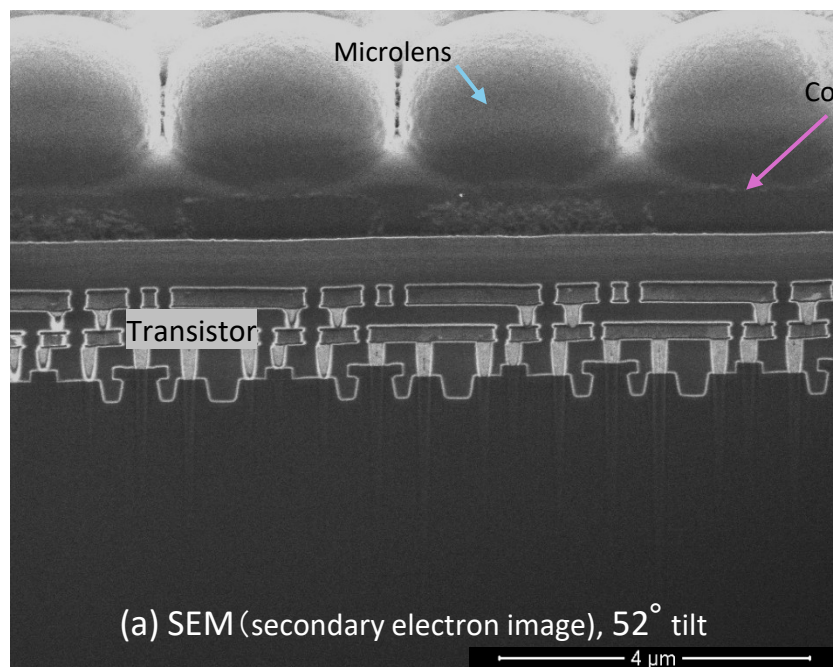
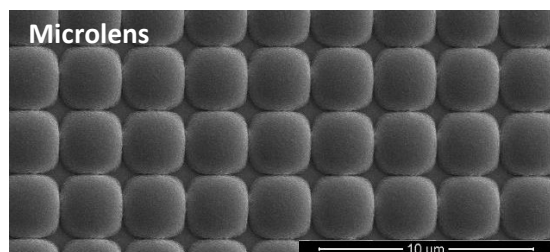
FIB Cross-Section Preparation of a CMOS Image Sensor

With a Focused Ion Beam (FIB) system, smooth cross-sections can be fabricated at specific locations. An image sensor was extracted from a commercially available webcam, and cross-sectional specimens were prepared for SEM and TEM observation.

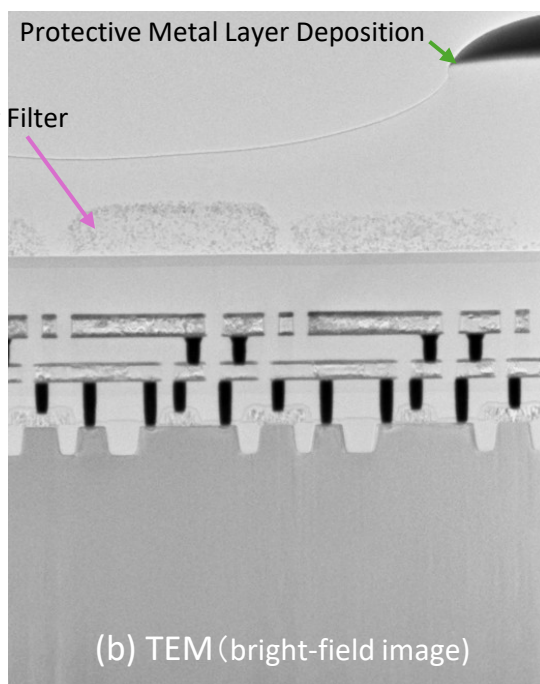
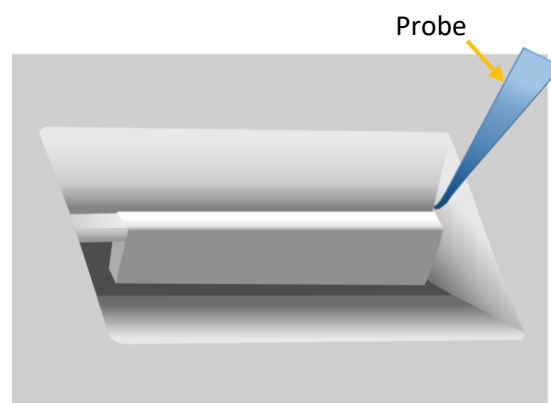


Transistor structures lie beneath the microlenses on the surface of the image sensor. Depending on the cross-sectioning location, various structural features can be observed.

<Surface SEM>



(a) While checking the milling condition with SEM, a cross-section at the target location is fabricated and then observed directly in SEM.



(b) After deposition of a protective surface layer, the region containing the target location is extracted, and the specimen is milled while monitoring both sides of the cross section.

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