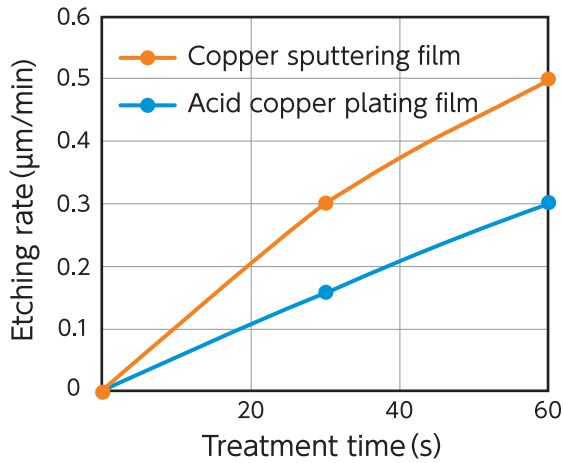


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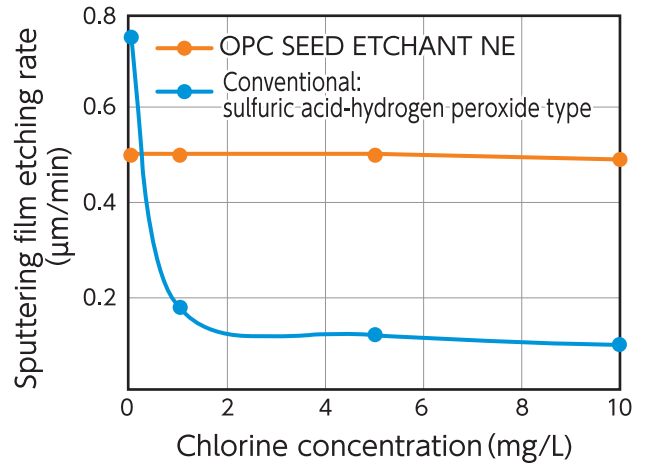
SAP

- Preferentially work for copper sputtering films
- Reduce the impact by chlorine drag-in, stable etching rate
- Can use for L/S=2/2 $\mu$ m micro-pattern formation

## Preferentially etch sputtering film



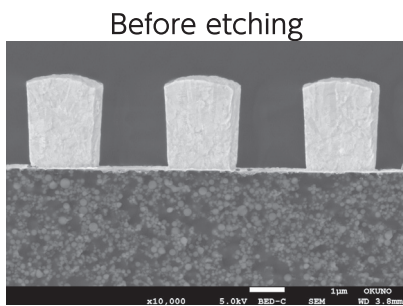
## Reduce impact by chlorine



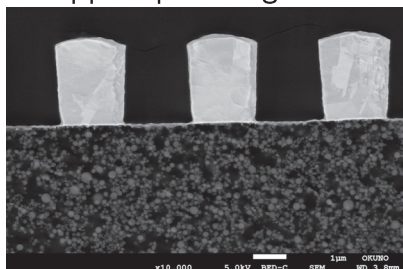
## High selectivity to sputtering film

## High stability in etching ratio

## Can form L/S=2/2 $\mu$ m micro pattern

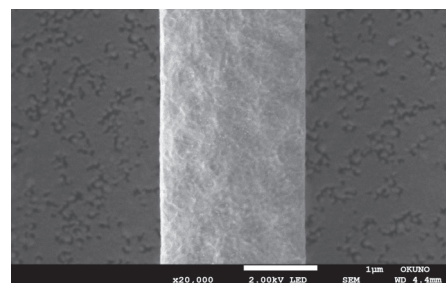


After copper sputtering film removal



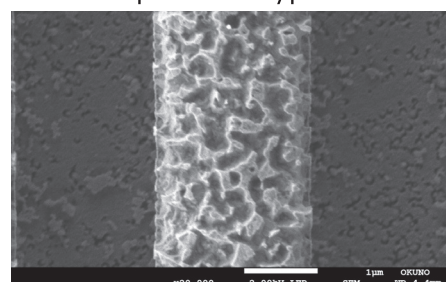
## Maintain surface flatness for high speed transmission

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Ra=15nm

Conventional: sulfuric acid-hydrogen peroxide type



Ra=53nm

ABF laminated 8 inch silicon wafer Ra=29nm  
 Titanium sputtering film 25 nm copper sputtering film 100 nm  
 \*ABF is an insulation build-Up film (ABF) by Ajinomoto Fine-Techno Co., Inc.

## Maintain original form Prevent side etching

## High surface flatness after etching