Infinite selective dry etching of ITO binary mask structures for extreme ultraviolet lithography (EUVL) using inductively coupled plasmas (ICP)

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Abstract: Currently, extreme ultraviolet lithography (EUVL) is being investigated for next generation lithography. Among the core EUVL technologies, mask fabrication is of great importance. In this work, we investigated etching properties of the EUVL mask materials such as ITO (absorber layer) and Ru (buffer/capping layer) by varying the Cl_2/Ar gas flow ratio, DC self-bias voltage (V_{dc}) and top electrode power ininductively coupled plasmas. The ITO (absorberlayer) layer could be etched with the etch selectivity close to infinite over the Ru (buffer/capping layer) layer.