

METHOD OF FORMING CONNECTION HOLE**ABSTRACT OF THE DISCLOSURE**

A method of forming a connection hole, which includes the steps of: laminating an etching stopper film made of a SiN based material and an interlayer insulating film made of a SiO_x based material on a substrate in this order; forming an organic film pattern on the interlayer insulating film on the basis of a connection hole pattern; dry-etching the interlayer insulating film using the organic film pattern as a mask while keeping a selection ratio to the etching stopper film; a fourth step of removing a carbon based protective film which is deposited on an exposed surface of the etching stopper film by the dry etching, using an etching reactive system including an oxygen based chemical species; and a fifth step of completing a connection hole by selectively etching the etching stopper film.

FIGURE 1