

ABSTRACT

A pattern formation method suitable for forming micro-patterns using electron beams (EB), X-rays, or extreme ultraviolet radiation (EUV) is provided. The method includes the following steps in the following order: (1) a step of forming and curing a under-layer film containing a radiation-sensitive acid generator which generates an acid upon exposure to radiation on a substrate, (2) a step of irradiating the under-layer film with radiation through a mask to cause an acid to be selectively generated in the exposed area of the under-layer film, (3) a step of forming an upper-layer film which does not contain a radiation-sensitive acid generator, but contains a composition capable of polymerization or crosslinking by the action of an acid, (4) a step of forming a cured film by polymerization or crosslinking selectively in the area of the upper-layer film corresponding to the area of the under-layer film in which the acid has been generated, and (5) a step of removing the area of the upper-layer film corresponding to the area of the under-layer film in which the acid has not been generated.