

ABSTRACT

A method for manufacturing a member with a recess structure, comprises: (1) a step of placing a catalytic material on a part of a first surface of an object to be processed, the first surface being formed of an element of which a boiling point of a fluoride is 550°C or lower, and the catalytic material containing an organic compound containing a polar functional group; (2) a step of irradiating the catalytic material with irradiation light containing deep ultraviolet light having a wavelength of 380 nm or shorter; and (3) a step of exposing the object to be processed to a fluorine-containing gas at 80°C or higher, wherein a recess structure is formed under the catalytic material on the first surface after the step (3).

Fig.7