

DESCRIPTION**EXPOSURE METHOD AND EXPOSURE APPARATUS, AND
DEVICE MANUFACTURING METHOD****ABSTRACT**

By the combination of adjusting optical properties of an optical system (PLL) by an irradiation unit (91) irradiating
5 non-exposure light on an optical element (90), which is movable, and adjusting the optical properties of the optical system (PLL) with an optical properties adjustment unit by moving the optical element (90), for example, the change in the optical properties of the optical system caused by the
10 temperature distribution of the optical elements whose center is at a position eccentric from the optical axis is corrected. Further, under a dipole illumination condition, in order to make optical properties of an optical system caused by non-rotational symmetry temperature distribution of optical
15 elements in the vicinity of pupils (PP1, PP2, PP3) into optical properties that can be corrected more easily by an optical properties adjustment unit, an irradiation unit (91A) irradiates non-exposure light on an optical element (111), which makes the optical element (111) have a rotational
20 symmetry temperature distribution. Accordingly, optical properties change in the optical system due to illumination light absorption can be effectively corrected.