

Fading of Colouring Matters  
Caused by Light Effect ( I )

KAMBA Nobuyuki

To reduce deterioration of museum objects some illuminance levels for light sources in museums and galleries are given by the illumination intensity (lux), which is calculated both with the relative luminous efficiency, effect on the human eye, and the energy distribution of light sources. The lux means a total efficacy not to fading of colouring matters but to the human eye. However, spectrum regions and an amount of energy which causes fading, and particularly an amount of fading are of our interests.

Most of experiments have employed the lux unit to express the degree of hazardous effect of radiation falls upon the colouring matters, thus only rough qualitative results are obtained. The purposes of this paper are to report the findings recorded since 1930 on the action of light on the colouring matters applied to museum objects, to explain the spectral response or reactivity of the colouring matter to the radiation, and to discuss quantitative problems such as the fading rate and the amount of fading.