



584th ASRC Seminar



Date: 13:30 ~ 15:00, 17 February

Location: Meeting Room 103, ASRC Building

Speaker: Dr. Toshitaka Oka

(Institute for Excellence in Higher Education,
Tohoku University)

Title: Electron spin resonance study
of unpaired electron for DNA-base

In order to clarify the mechanism of DNA damage induced by K-shell ionization of nitrogen and oxygen atoms, short-lived electron spin resonance (ESR) spectra of DNA-base molecules during the monochromatic soft X-ray irradiation were measured. The ESR intensity for cytosine was significantly enhanced by the K-shell ionization, whereas that for thymine was not enhanced. By changing the substituent, we found that the ESR intensities for pyrimidine bases were strongly correlated with the electronegativity of substituent, such as halogen atoms. The substituent effect of the pyrimidine ring in the DNA damage processes will be discussed.



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