

# ISCOM



INTERNATIONAL SCHOOL AND CONFERENCE  
ON OPTICS AND OPTICAL MATERIALS

## BOOK OF ABSTRACTS

BELGRADE 2007



# **BOOK OF ABSTRACTS**

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## Optical and electron spectrometry of molecules of biological interest

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Optical absorption and emission spectroscopy together with low energy electron interaction (elastic scattering, excitation, ionization, resonances) with biologically relevant molecules (nitrogen, oxygen, water, alcohols, tetrahydrofuran, tetrahydrofurfuril alcohol, glycine, alanine) are studied in order to understand radiation damage. Versatile high resolution electron spectrometers are used in the present study of electron-molecule interactions [1]. Energy loss spectra were recorded for these molecules in order to identify electronic transitions from ground state to both allowed and optically forbidden states. Optical emission spectra have been recorded from gas discharge processes by low resolution optical spectrometer (Ocean 2000). Also, electronic spectra were compared with high resolution synchrotron photoabsorption spectra where these spectra had been available.

Another aim of the present studies of organic molecules is to investigate the presence of pollutants. Different laser spectroscopy methods are available for these purposes. Absorption-based laser spectroscopy is one of the most widely used analytical tools for detection of a specific molecule and one of the most important techniques for gas sensors in environmental [2]. Direct laser absorption spectroscopy based on the Beer –Lambert absorption law is often used for quantitative measurements.

### References

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