

CONFERENCE ABSTRACTS

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“Science and Progress”

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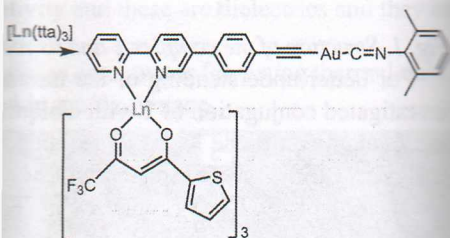
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Complexes as Potential Sensitizer of Luminescence

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ics of lanthanide complexes are currently
lanthanide luminescence does not depend on a
unique and invariable emission. High emis-
the excited state, as well as low toxicity, high
tation by electric current - all this provides a
source in OLED technology, bioimaging and
d-metal complexes as ligands provides an
y to be used as excitation energy for a lan-
ble of creating a d-f complex with emission
IV light. In this study novel Au(I) complex
is a ligand for various lanthanide cations to



appreciate financial support from the Russian
64. All measurements were performed using
sburg State University Research Park: Centre
Optical and Laser Materials Research, Centre
Research, and X-ray Diffraction Centre.

The Research of the Qualitative Composition and Antioxidant Activity of Yarrow Phenolic Compounds in Conditions of Industrial Pollution

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Under conditions of technogenic environment the changes of biochemical composition and physiological processes of plants take place while the outward appearance is preserved. In extreme conditions the most important mechanism of stability of plants is the activation of biochemical system of antioxidant properties protection, which includes a large number of components exhibiting antioxidant properties, including phenolic compounds. Biological activity of the majority of vegetable polyphenols is caused in many respects by ability to inhibit free-radical processes. Thereof, studying of responses of alive organisms and, in particular plants, on influence of anthropogenous factors and stressful conditions is urgent. The samples of yarrow (*Achillea millefolium*) selected as research objects in this work, are widely used in medicine and are the official medicinal plants of the Pharmacopoeias of different countries. We have the analysis of the qualitative composition and antioxidant activity of phenolic compounds of yarrow growing in the industrial areas of Tver town (Thermal Power Stations, Railcar plant, the Paint and Varnish Factory, The Printing Plant) as a goal. Finished pharmaceutical forms of yarrow of the firm "Health" have been chosen as a control sample. We performed the quality analysis of phenolic compounds in extracts of yarrow growing in Tver's industrial areas using a UV spectroscopy method. For identification of main groups of phenolic compounds as a part of a yarrow electronic spectrum of absorption of water and ethanol extracts of samples in the region of wavelengths of 200-500 nanometers were written down. The antioxidant activity of polyphenols of yarrow ethanol extracts against a stable radical DPPH (1,1-diphenyl-2-picrylhydrazyl) was investigated. It has been established that an amount of phenolic compounds and their antioxidant activity increase in the stressful conditions for yarrow (especially under the influence of the contaminants of TPS-3, the Paint and Varnish Factory). The conducted research allows to draw a conclusion that the extent of stressful influence of adverse factors of the environment, including industrial pollution, on the vegetable organism can be estimated using data of the phenolic compounds content, the main biologically active substances in the plants composition and their antioxidant activity.

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