

# ANALYSIS OF THE COMPOSITION OF ISOTOPES IN A SAMPLE OF HIGH-TEMPERATURE SUPERCONDUCTORS (HTS) AFTER IRRADIATION IN THE RADIATION FIELD OF A LEAD CONVERTER WITH A PROTON BEAM (EP = 660 MeV)

Friday, 15 July 2022 18:10 (20 minutes)

Combined talk

ANALYSIS OF THE COMPOSITION OF ISOTOPES IN A SAMPLE OF HIGH-TEMPERATURE SUPERCONDUCTORS (HTS) AFTER IRRADIATION IN THE RADIATION FIELD OF A LEAD CONVERTER WITH A PROTON BEAM (EP = 660 MeV)

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This report considers one of the stages of work on the development of a series of superconducting magnets operating at temperatures up to 65 K for the possible creation on the basis of a series of accelerators: proton cyclotron (Phasotron), medical cyclotron (SC230 with HTS winding, 4kA, 2-T) and etc.

1. Novikov M., Khodzhbagiyani H., Tyutyunnikov S., Stegailov V., Smirnov G., Petrova M., Kondratiev B. Book of abstracts and articles of Int. Conf. "Modern Problems of Nuclear Energetics and Nuclear Technologies". P. 111. Tashkent, November (2021).

ION SOURCE FOR RESEARCH IN NUCLEAR PHYSICS

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An ionizer of the MaMFIS type (Main Magnetic Focus Ion Source) [1] produces ions with a high charge in local ion traps of a pulsating electron beam, where the density can still reach extremely high values (~10 kA/cm<sup>2</sup>). X-ray radiation from Bi<sup>60+</sup> ions was detected. The peculiarity of the ionizer – a high ion charge and a relatively low number of ions, makes it attractive for experiments with an ion Penning trap (MATS and LaSpec: High-precision experiments using ion traps and lasers at FAIR).

1. V.P. Ovsyannikov, A.V. Nefedov, A.Yu. Boytsov, A.Ya. Ramsdorf, V. I. Stegailov, S.I. Tyutyunnikov, A.A. Levin // Main magnet, NIM, 502 (2021) 23-28.

<sup>152</sup>Eu NUCLEUS IN THE FIELD OF LASER RADIATION 1064nm

E.V. Barmina<sup>1</sup>, A.V. Simakin<sup>1</sup>, S.I. Tyutyunnikov<sup>2</sup>, V.I. Stegailov<sup>2</sup>, G.A. Shafeev<sup>1,3</sup>, I.A. Shcherbakov<sup>1</sup>

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The experiments were carried out within the framework of the project «Energy and Transmutation of Radioactive Waste». The decay of nuclei under the action of laser radiation with a wavelength of 1064 nm on their aqueous solutions was studied. The well-studied <sup>152</sup>Eu nucleus is of particular interest.

1. E.V. Barmina, S.I. Tyutyunnikov et al. Quantum Electronics (2019), 49 (8):784.

## The speaker is a student or young scientist

No

## Section

1. Experimental and theoretical studies of nuclear reactions

**Primary author:** Mr STEGAYLOV, Vladimir (JINR)

**Presenter:** Mr STEGAYLOV, Vladimir (JINR)

**Session Classification:** Experimental and theoretical studies of nuclear reactions