BECQUEREL PROJECT

Проект БЕККЕРЕЛЬ

Beryllium (Boron) Clustering Quest in Relativistic Multifragmentation

http://becquerel.jinr.ru

Project BECQUEREL at portal of nuclear knowledge BelNET

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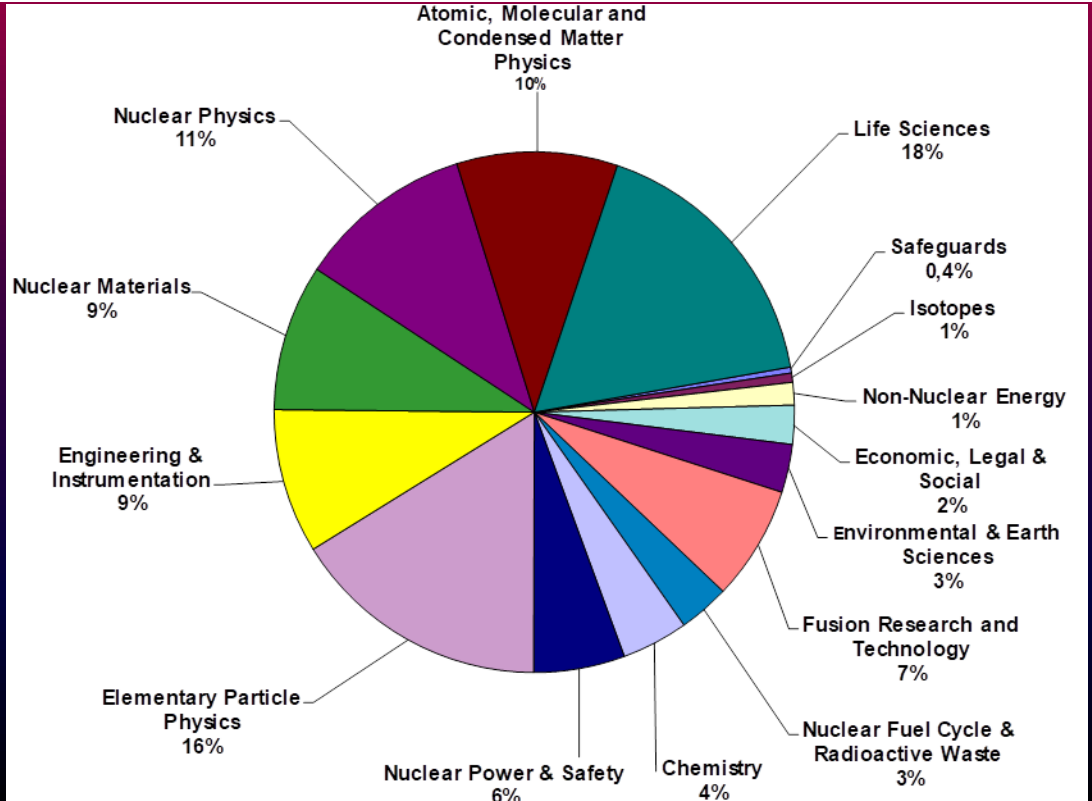
Nuclear knowledge management (NKM)

https://www.iaea.org/topics/nuclear-knowledge-management

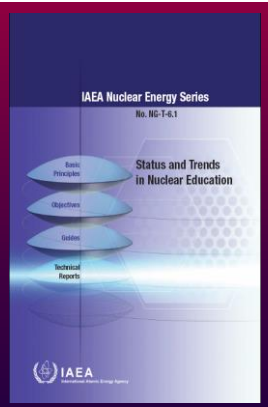


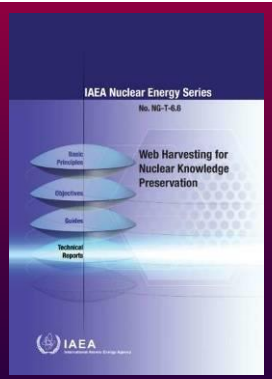
Knowledge management (KM) itself is defined as an integrated, systematic approach to identifying, acquiring, transforming, developing, disseminating, using, sharing, and preserving knowledge,relevant to achieving specified objectives.

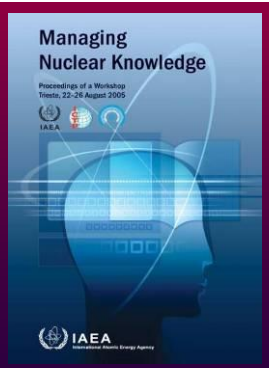
Nuclear knowledge management (NKM) is defined as knowledge management in the nuclear domain. ***NKM*** consists in the acquisition, collection, transfer, preservation, maintenance, use, and sharing of knowledge. This is essential for developing and maintaining the necessary technical knowledge and competencies required for nuclear power programs and other nuclear technologies.

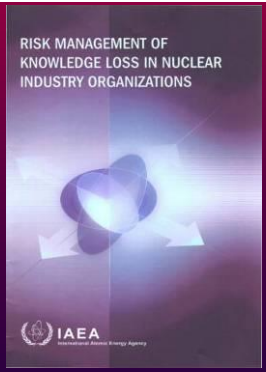
NKM manuals by IAEA

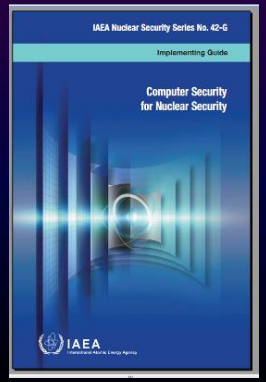
https://www.iaea.org/publications

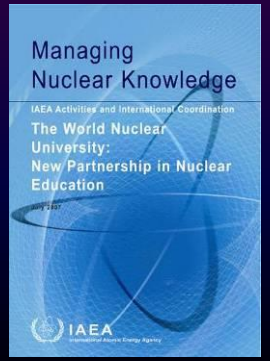


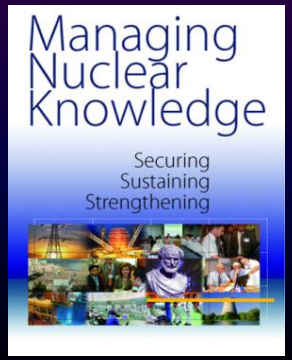


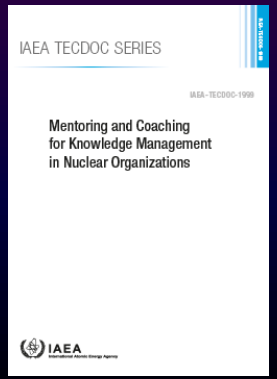


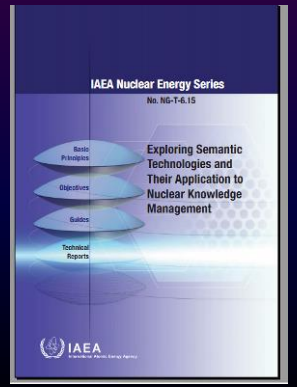


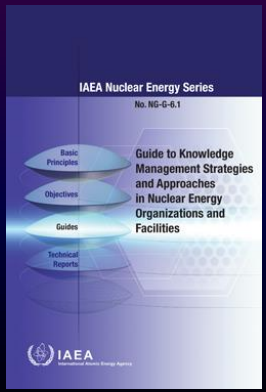




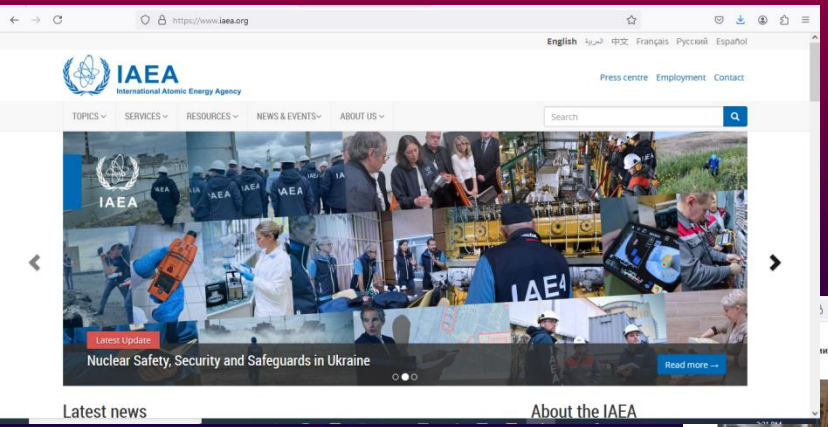




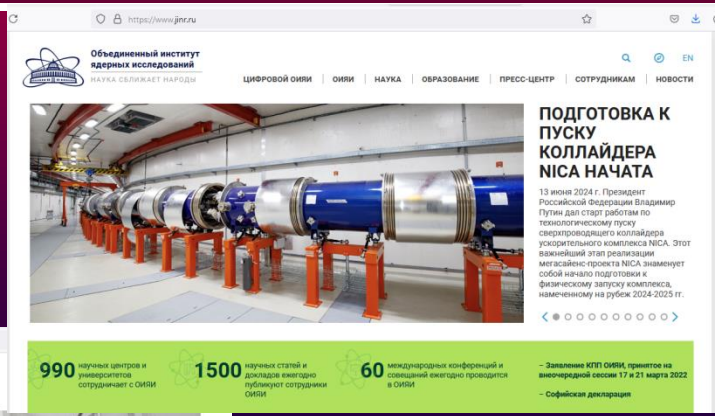




Examples of NKM portals



https://www.iaea.org/



http://jinr.ru/

https://www.atomic-energy.ru/

Free software - v. s. proprietary software

Free software (*software libre* or *libreware*) is computer software distributed under terms that allow users to run the software for any purpose as well as to study, change, and distribute it and any adapted versions.
Free software is a matter of liberty, not price. All users are legally free to do what they want with their copies of a free software (including profiting from them) regardless of how much is paid to obtain the program. Computer programs are deemed "free" if they give end-users (not just the developer) ultimate control over the software and, subsequently, over their devices.

Proprietary software is software that is the private property of authors or copyright holders and does not meet the criteria for free software (providing the program code is not sufficient). The owner of proprietary software retains a monopoly on its use, copying and modification, in whole or in significant respects.

Framework eLab based on free software

Debian GNU/Linux
Web-server Apache
Firebird Database Server PHP
Application Server

Principles of organization and features of the system

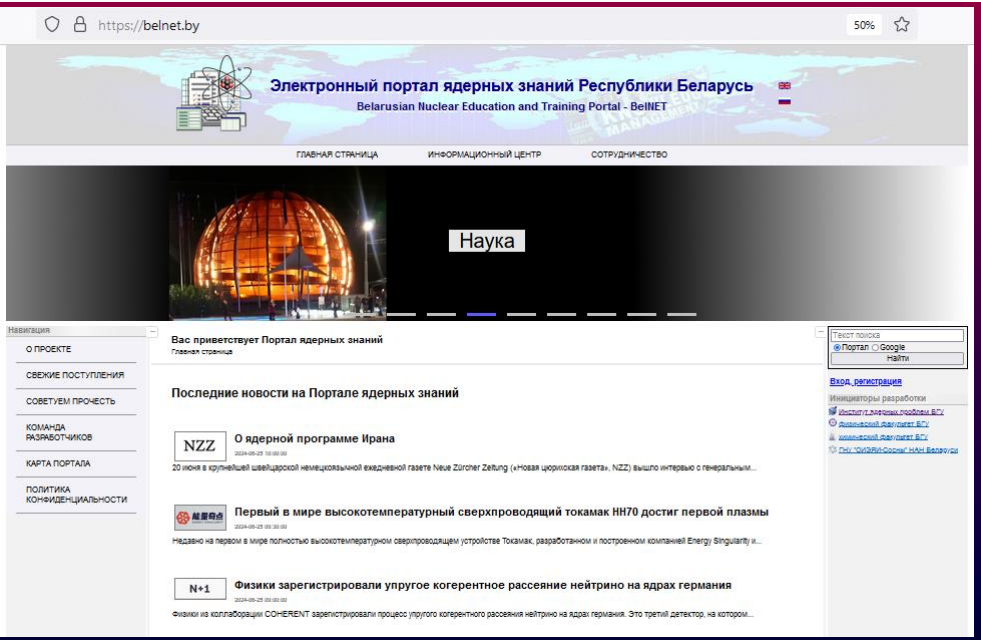
- work under Windows and Linux in multi-user mode;
- within a corporate network and on the Internet or on a separate computer;
- with data entry through filling out web forms on-line;
- with separation of access rights for different categories of users;
- via a Web interface using widely used browsers;
- remote access via VPN;
- provision of the HTTPS protocol;
- increased requirements for the information security system.

Software ***eLab***

- ✓ is open to modification by users, allowing the user to make changes to the templates of the final documents;
- ✓ allows to simultaneously support the document flow of many laboratories and organizations, with different profiles, within one installed copy of the product.

National certificates of computer program registration

Content management system eLab-Science and Belarusian nuclear knowledge portal BelNET



https://belnet.by/

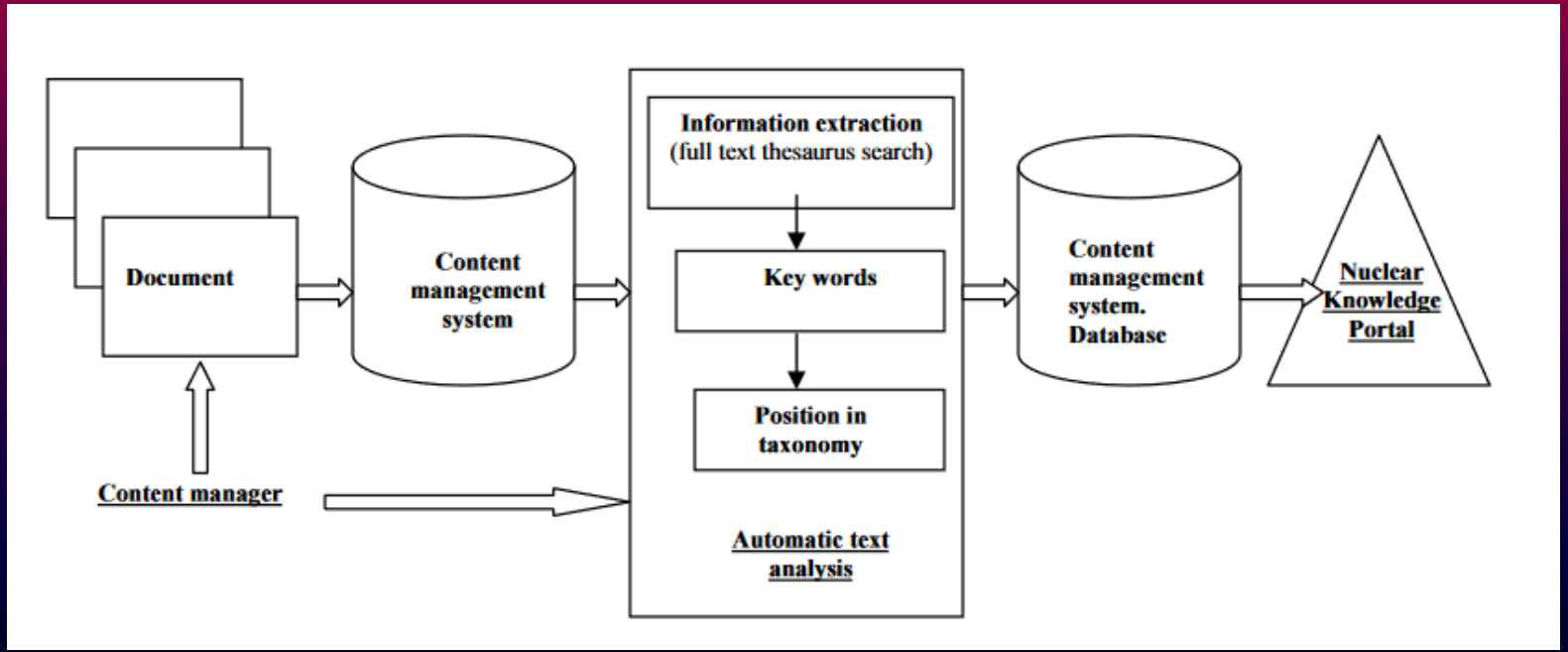
https://net.inpnet.net/

https://belnet.bsu.by/

All the necessary functions of the portal have been implemented, including the ability to remotely edit the portal structure and enter documents, various sorting and filtering, as well as two levels of access to documents depending on user rights, an original testing mechanism when performing laboratory work.

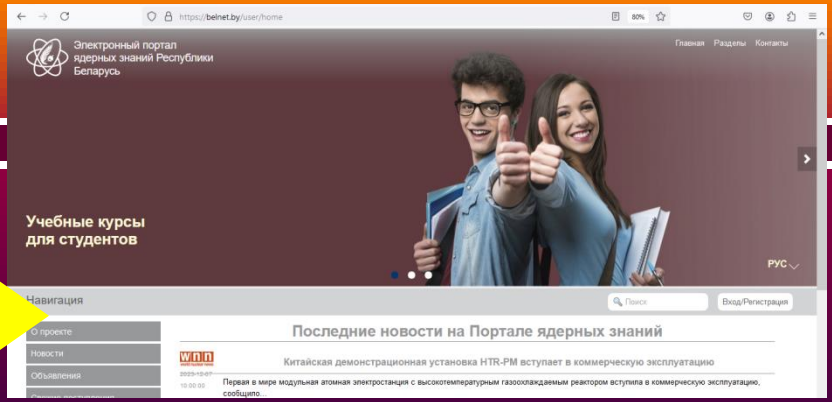
BelNET works since 2015, contains now 5000 records, focuses on the Russian-speaking audience.

BelNET is semantic portal

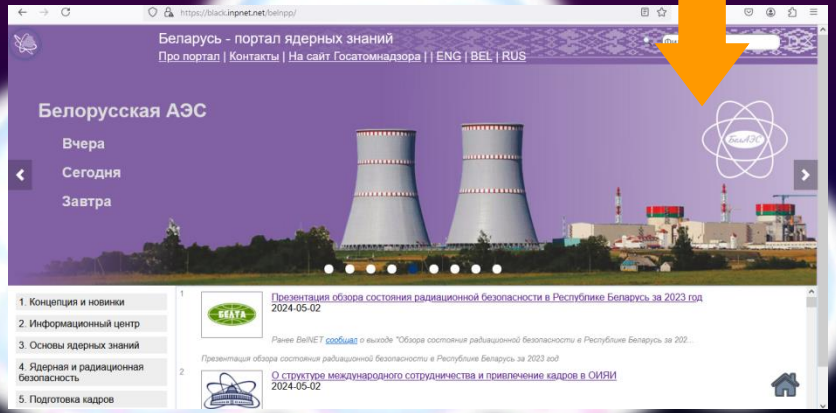


New functions based on original algorithms and semantic technologies

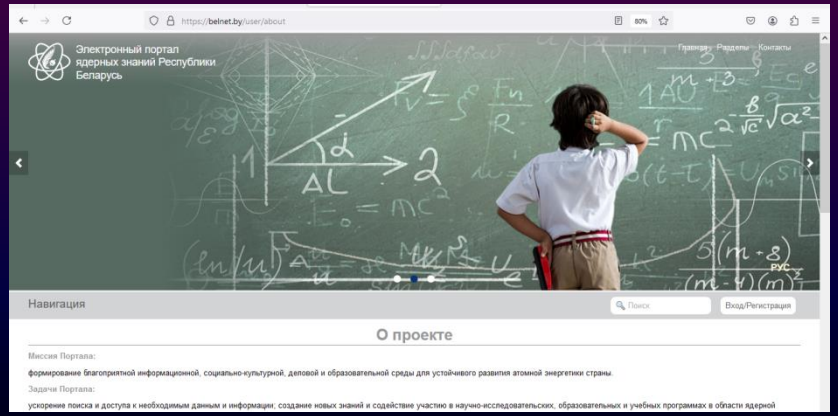
Belarusian Nuclear Knowledge Repository



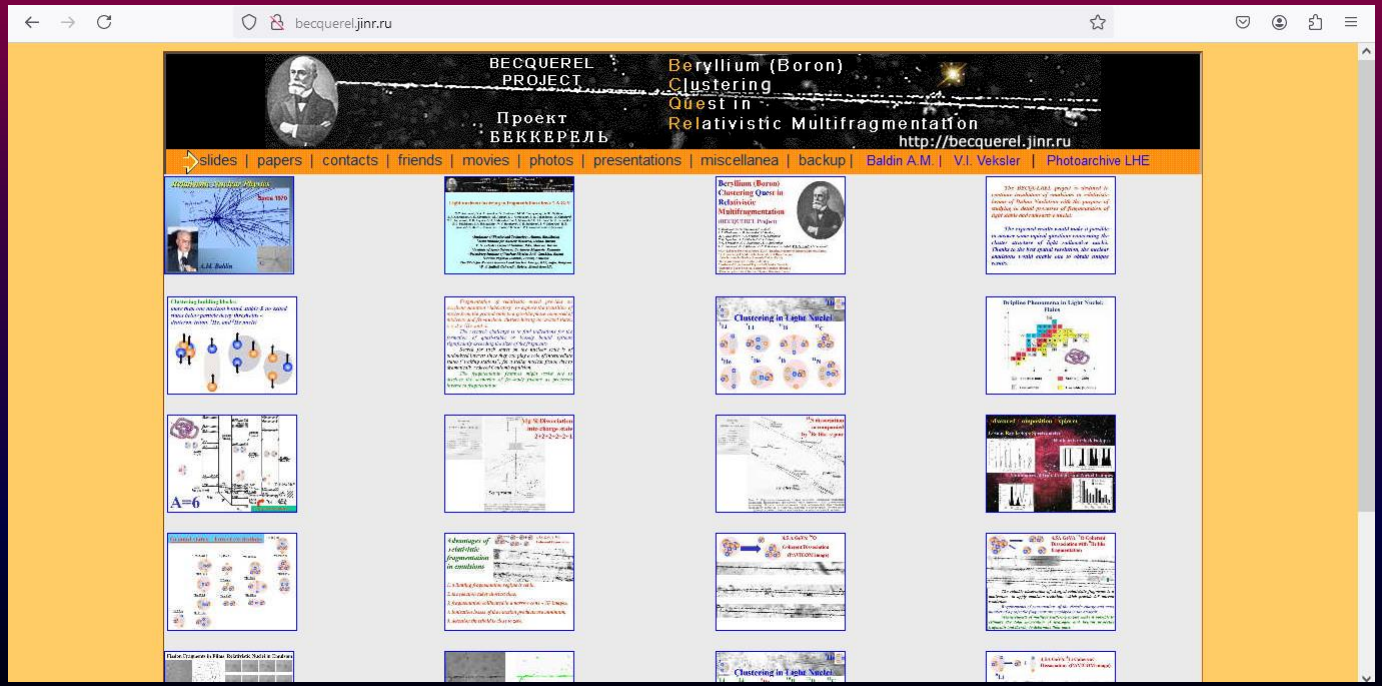
Portal of practical nuclear knowledge



Basics of classic nuclear knowledge



BECQUEREL project is devoted to the study of interactions of relativistic nuclei in emulsion



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Russian Text © The Author(s), 2022, published in Yadernaya Fizika, 2022, Vol. 85, No. 6, pp. 397–408.

NUCLEI
Experiment

Prospects of Searches for Unstable States in Relativistic Fragmentation of Nuclei

D. A. Artemenkov[1], V. Bradnova[1], O. N. Kashanskaya[2], N. V. Kondratieva[1], N. K. Kornegrutsa[1], E. Mitsova[1,3], N. G. Peresadko[4], V. V. Rusakova[1], R. Stanoeva[5,3], A. A. Zaitsev[1,4]*, I. G. Zarubina[1], and P. I. Zarubin[1,4]

Received June 22, 2022; revised June 22, 2022; accepted June 24, 2022

Abstract—Prospects of the BECQUEREL experiment devoted to studying, within the relativistic approach, problems of nuclear-cluster physics are discussed. The nuclear track emulsion method used in the present study permits fully investigating relativistic final states in the fragmentation of nuclei. The present study focuses on the dynamics of the formation of a ^{8}Be nucleus and the Hoyle state, as well as on searches for the 4α condensate decaying through them. The development of analysis of exposure to ^{84}Kr nuclei at an energy of 950 MeV per nucleon is described in this context. The status of searches for the isobar analog state of the ^{13}N nucleus in the fragmentation of ^{14}N nuclei at an energy of 2 GeV per nucleon is presented as a continuation of studies of light nuclei

DOI: 10.1134/S1063778822060035

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TECHNOLOGIES
OF NUCLEAR MATERIALS

Recent Applications of Nuclear Track Emulsion Technique

P. I. Zarubin[a,b]*

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[b] Lebedev Physical Institute, Russian Academy of Sciences, Moscow, 119991 Russia
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Received May 11, 2016

Abstract—A survey of recent results obtained using the nuclear track emulsion (NTE) technique in low ener
applications is given. NTE irradiation with 60 MeV ^{8}He nuclei provides identification of their decays at stc
ping, evaluation of the possibility of α range spectrometry, and observation of drift of thermalized ^{8}He ator
Correlations of α particles studied in $^{12}C \rightarrow 3\alpha$ splitting induced by 14.1 MeV neutrons indicate the presen
of a superposition of 0^+ and 2^+ states of the ^{8}Be nucleus in the ground state of ^{12}C. Angular correlations
fragments are studied in boron-enriched NTE, and the prospects of NTE application in radioactivity a
nuclear fission research are discussed. It is proposed to use an automated microscope to search for colline
tripartition of heavy nuclei implanted in NTE. Surface irradiation of NTE by a ^{252}Cf source is started. Plar
events containing fragment pairs and long-range α particles, as well as fragment triples, are studied. N
of 1.2 and 3 A MeV.

Eur. Phys. J. A (2020) 56:250
https://doi.org/10.1140/epja/s10050-020-00252-3

THE EUROPEAN PHYSICAL JOURNAL A

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vy ions, automated microscope, fission, cyclotr

Regular Article - Experimental Physics

Unstable states in dissociation of relativistic nuclei

Recent findings and prospects of research

D. A. Artemenkov[1], V. Bradnova[1], M. M. Chernyavsky[2], E. Firu[3], M. Haiduc[3], N. K. Kornegrutsa[1], A. I. Malakhov[1], E. Mitsova[1], A. Neagu[3], N. G. Peresadko[2], V. V. Rusakova[1], R. Stanoeva[4], A. A. Zaitsev[1,2], P. I. Zarubin[1,2 ,a], I. G. Zarubina[1]

[1] Joint Institute for Nuclear Research, Dubna, Russia
[2] Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia
[3] Institute of Space Science, Magurele, Romania
[4] Southwestern University, Blagoevgrad, Bulgaria

Received: 18 April 2020 / Accepted: 15 September 2020

Communicated by David Blaschke

JINR-INP agreement

Дополнительное соглашение №
к соглашению о сотрудничестве №187 от 16.03.2023 между

Объединенным институтом ядерных исследований,
Адрес: Россия, 141980, Московская область, г. Дубна, ул. Жолио-Кюри, 6,
В лице:
Должность: Директор
Имя: Трубников Григорий Владимирович
Основание полномочий: Устав
далее именуемым «ОИЯИ», и

Научно-исследовательским учреждением "Институт ядерных проблем" Белорусского государственного университета
Адрес: 220006, Беларусь, г. Минск, ул. Бобруйская, 11
В лице:
Должность: Директор
Имя: Максименко Сергей Афанасьевич
Основание полномочий: Устав

В дальнейшем, при совместном упоминании в тексте, ОИЯИ и БГУ именуются «Стороны», а при упоминании по-отдельности «Сторона».

Стороны договорились дополнительно осуществлять сотрудничество по проекту:

- № 02-1-1087-2009 «Исследования по физике релятивистских тяжелых и легких ионов на ускорительных комплексах Нуклотрон-М/NICA ОИЯИ и SPS ЦЕРН»;

Стороны определили, что в рамках дополнительного соглашения они сотрудничают в области исследований нуклонной кластеризации и вклада нестабильных ядерно-молекулярных состояний в диссоциации легких стабильных и радиоактивных изотопов, а также свойств разреженной барионной материи в диссоциации тяжелых ядер. Также в рамках данного соглашения Стороны договорились о совместной научно-образовательной деятельности в области ядерных исследований.

1.1. Настоящее соглашение вступает в силу в дату подписания последней из Сторон и действует в течение всего срока действия Соглашения о сотрудничестве

1.2. Для координации совместных работ в рамках настоящего соглашения Стороны назначают следующих представителей:
Со стороны ОИЯИ:
Имя: П.И. Зарубин
Должность: начальник Сектора №4 НЭОФТИ ЛФВЭ
Адрес электронной почты: zarubin@jinr.ru
Телефон: +7(496) 216-3403

Со стороны БГУ:
Имя: С.Н. Сытова
Должность: Заведующий Лабораторией аналитических исследований
Адрес электронной почты: sytova@inp.bsu.by
Телефон: +375 (17) 242-47-39

Подписано

07 июля 2023

Г.В. Трубников С.А. Максименко

Lecture by Dr.A.Zaitsev in Belarusian State University devoted to BECQUEREL project

Уважаемые студенты и сотрудники!

23 мая 2024 г.

в ауд. 418 физфака БГУ

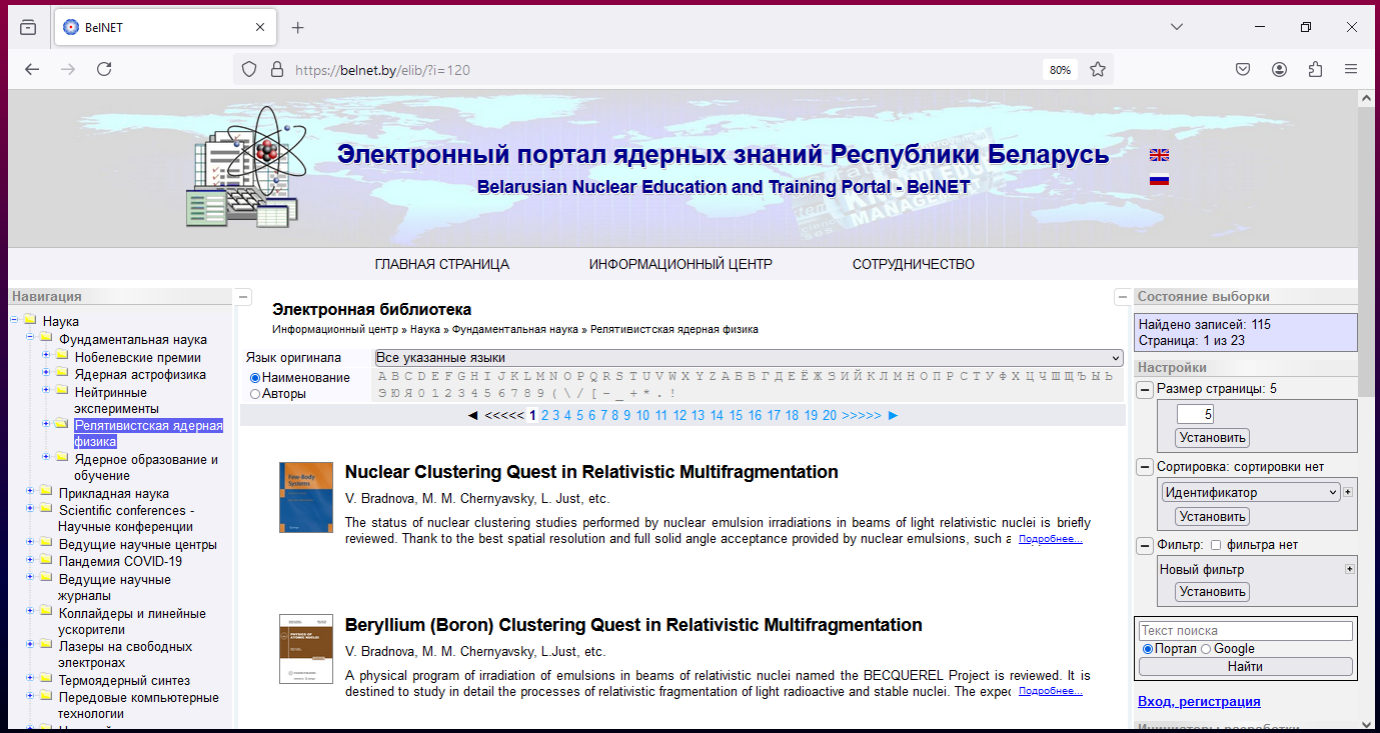
состоится лекция

старшего научного сотрудника
Лаборатории физики высоких энергий
им. В.И. Векслера и А.М. Балдина,
Объединенный институт ядерных исследований (ОИЯИ)
(г. Дубна, Россия)

Андрея ЗАЙЦЕВА

Современное состояние и перспективные применения метода ядерной фотоэмульсии

Начало в 11.45.


BelNET
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Термоядерный синтез
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Язык оригинала
Все указанные языки
Наименование
Авторы
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z А Б В Г Д Е Ё Ж З И Й К Л М Н О П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ы Ь Э Ю Я 0 1 2 3 4 5 6 7 8 9 (\ / [- _ + * . !
◄ <<<<< 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 >>>>> ►
Nuclear Clustering Quest in Relativistic Multifragmentation
V. Bradnova, M. M. Chernyavsky, L. Just, etc.
The status of nuclear clustering studies performed by nuclear emulsion irradiations in beams of light relativistic nuclei is briefly reviewed. Thank to the best spatial resolution and full solid angle acceptance provided by nuclear emulsions, such a
Подробнее...
Beryllium (Boron) Clustering Quest in Relativistic Multifragmentation
V. Bradnova, M. M. Chernyavsky, L.Just, etc.
A physical program of irradiation of emulsions in beams of relativistic nuclei named the BECQUEREL Project is reviewed. It is destined to study in detail the processes of relativistic fragmentation of light radioactive and stable nuclei. The expe
Подробнее...
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Найдено записей: 115
Страница: 1 из 23
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Размер страницы: 5
5
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Идентификатор
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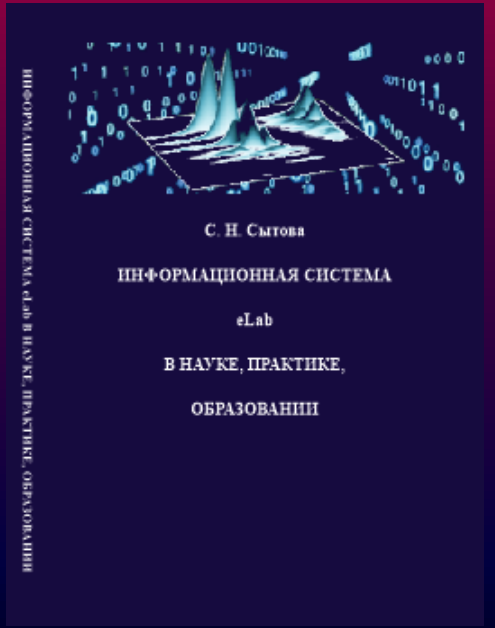
S. Sytova. Nuclear knowledge management system in the Republic of Belarus. Journal of the Belarusian State University. Physics, 2022, № 2, 87–98



It is better
to be making the news
than taking it.

Sir Winston Churchill

Thank you for attention!

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