



*Dear colleagues!*

We invite you to participate in  
VIII International Conference «Nuclear Energy, Nuclear and Radiation Technology of the  
21st Century», dedicated to the 55th anniversary of the founding of a scientific institution  
«JIPNR – Sosny» and to the 75th anniversary of nuclear industry,  
June 23–26, 2020, Minsk

The Conference is organized by State Scientific Institution «the Joint Institute for Power and Nuclear Research – Sosny» with the support of the National Academy of Sciences of Belarus and the International Union of Veterans of Nuclear Energy and Industry при поддержке Национальной академии наук Беларуси и Международного союза ветеранов атомной энергетики и промышленности.

The aim of the Conference is discussion of methodological, environmental and social aspects of the use of nuclear energy at the present stage; analysis of research in the field of scientific support for the development of nuclear energy, nuclear and radiation technology, radioactive waste and spent nuclear fuel management; development of recommendations for the safe use of nuclear energy; holding the round table: The International Union of Public Associations «The International Union of Veterans of Nuclear Energy and Industry» (IUPA IUVNEI) «Nuclear energy is a leader in technological progress. The role of veterans in promoting advanced nuclear technology». «75th anniversary of the nuclear industry, development prospects».

Conference topics:

- 1) energy security;
- 2) scientific research in support of the development of nuclear energy;
- 3) nuclear and radiation technology;
- 4) development of methods, technological solutions and new technology for ensuring safety in the operation of nuclear and radiation facilities;
- 5) combined use of active and passive safety systems in a nuclear power plant design;
- 6) radioactive waste and spent nuclear fuel management;
- 7) nuclear infrastructure development;
- 8) the round table «Nuclear energy is a leader in technological progress. The role of veterans in promoting advanced nuclear technology».

Specialists from the Republic of Belarus, the Russian Federation, Kazakhstan, Armenia, Bulgaria, Hungary, Lithuania, Slovakia, Ukraine, Finland, the Czech Republic and other countries are expected to attend the Conference.

The Conference will be held June 23–26, 2020 in the conference hall of the Yubileinaya Hotel located at: Pobediteley ave.,19, Minsk.

Please send abstracts<sup>1</sup> and registration form by April 30, 2020 by e-mail: **dimmax67@sosny.bas-net.by** marked «Nuclear technology 2020».

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<sup>1</sup> Requirements for abstracts and reports are presented on page 4.

Contacts:

**8-029-758-04-77, 8-017-385-93-72, 8-017-391-13-54, 391-14-60**

**Registration fee\* of the delegate is:**

(registration form in attached file «registration.xlsx»)

**7 000 RUB / 120 \$ USA / 100 € / 210 BYN / for young researcher – 60 BYN, for participants from Belarus - 100 BYN**

It can be paid in the preferred currency.

The registration fee can be paid in cash with the issuance of a receipt order or transferred to a bank account until **June 1, 2020.**

Account number (IBAN):

BY 80 AKBB 3632 9000 0200 3520 000 – BYN

BY 78 AKBB 3632 9000 0202 9520 0000 – US dollar

BY 33 AKBB 3632 9000 0203 2520 0000 – Euro

BY 79 AKBB 3632 9000 0201 6520 0000 – RUB

ОАО «АСБ Беларусбанк» в г. Минске, 220047, ул. Долгобродская, 1

BIC AKBBBY2X, TIN 190341033, GCEO 3757542

Registration fee payment provides the following options:

- attendance at all meetings of the conference for three days, receipt of a set of documents (abstracts, collection of reports of the VIII International Conference "Nuclear Energy, Nuclear and Radiation Technologies of the 21st Century", information booklet on the scientific institution "JINR - Sosny", notebook, pen);
- participation in daily morning and afternoon breaks (coffee break);
- welcome dinner at the start of the conference.

You can register by sending the completed participant form:

by email: [dimmax67@sosny.bas-net.by](mailto:dimmax67@sosny.bas-net.by).

by fax: (375 17) 391 43 55 marked "Nuclear Technology 20 - Conference",

on the institute's website: <http://sosny.bas-net.by>.

Hotels offered for check-in:

"Yubileinaya"

Address: Minsk, Pobediteley Ave., 19,

Reservation phone: +375 (17) 226-90-37, +375 (17) 226-73-14,

e-mail. <http://www.yhotel.by>;

"Belarus"

Address: Minsk, st. Storozhovskaya, 15, tel. (+375 17) 209 71 06.

e-mail. <http://www.hotel-belarus.com>

Please confirm your arrival, indicating the date of arrival, type of transport and the name of the booked hotel until 01.06.2020 by e-mail: [dimmax67@sosny.bas-net.by](mailto:dimmax67@sosny.bas-net.by)

\* It is possible to conclude an agreement, and if you do not have the opportunity to attend the conference, you can order a package of documents (abstracts and collection of reports). Package order equiv. 20 USD.

Organizing committee

## General requirements for abstracts and reports

The materials of the report must be drawn up strictly in accordance with the requirements!

1. The document must be in MS Word format (doc, docx). The name of the report file should represent  
**Surname of the first author and Topic number in Latin transcription, for example, Ivanov 01.doc**
2. The text of the report must be formatted in A4 (portrait orientation), Times New Roman font, size - 12, line spacing - 1.0, break line - 10 cm. The text should be aligned in width.  
Margins: top - 1.5 cm; lower - 1.5 cm, left - 2.5 cm and right - 1.5 cm;
3. Drawings and graphs must have a clear image, can be presented in graphic editors (\* .jpg, \* .tif). You can use color graphics or drawings. The caption must be centered and italicized.
4. Formulas must be made in the built-in Microsoft Word Equation Editor and numbered on the right side. The size of the formulas must match the size of the main text.
5. The report should not exceed 5-8 pages (including tables and a list of references on individual pages).
6. Abstracts volume - one A4 page.

### **Poster Requirements**

Poster size (A1, A0 format).

When submitting a poster in advance in electronic form \* in the specified format, it can be printed.

\* Power Point, Corel, InDesign, Adobe Illustrator.

V.V. Toropova, A.V. Radkevich, N.I. Voronik

## INFLUENCE OF COMPLEX-FORMING ANIONS ON THE CHOICE OF THE METHOD OF CLEANING SOLUTIONS FROM RADIONUCLIDES

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**Introduction.** As it is known, the process of hydrolysis of metal ions proceeds in two stages: the formation of mononuclear (1) and polynuclear (2) hydroxocomplexes [1]:



As the pH of the solution increases, metal ions sequentially pass from hydrated forms to mononuclear and polynuclear hydroxocomplexes, and with a further increase in pH, to colloidal particles, which can aggregate to form a precipitate (Fig. 1). This sequence of processes is valid for solutions with a macroconcentration of hydrolyzable metal ion, usually above  $10^{-6}$  mol/l.

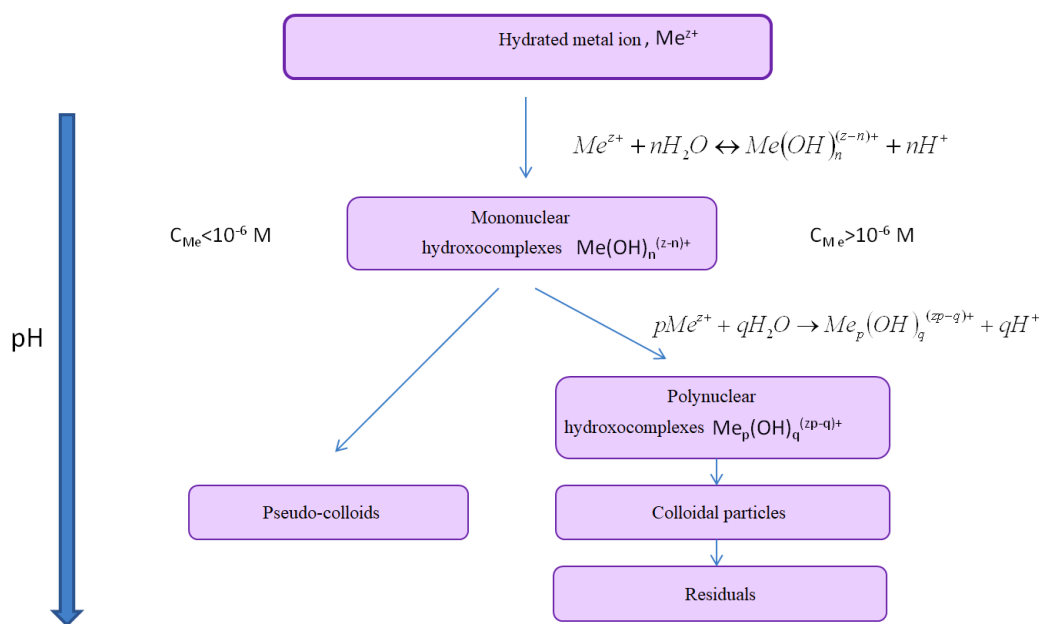


Fig. 1. General scheme of hydrolysis of metal ions in solution

### References

1. Давыдов, Ю.П. Формы нахождения металл-ионов (радионуклидов) в растворе / Ю.П.Давыдов, Д.Ю.Давыдов. – Минск: Беларус. навука, 2011. – 302 с.
2. Cobalt speciation in Aqueous Solution and Sorbents on the Basis of Natural Dolomite for Cobalt Removal/ A.V. Radkevich [et al.] // Chemistry Research and Application. Cobalt. Occurrence, Uses and Properties/ Nova Science Publisher, Inc.; ed. Yamamoto Kobayashi, Haruto Suzuki. – New York, 2013. – Ch. 6. – P. 191 – 214.