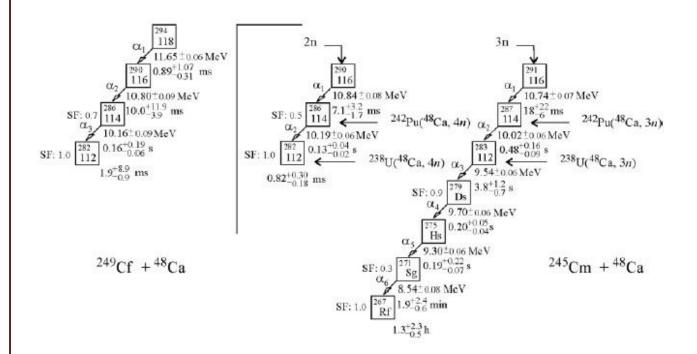
# INTOS NEWSLETTER



December 2018 Volume 42 Number 1

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## COVER PHOTO

Observed decay chain in Oganesson (Element 118) together with previously observed chains (see next page).

EDITOR
John P. Greene
greene@anl.gov

DESIGN AND LAYOUT Gavin Gordon SUBSCRIPTIONS David Gilliam david.gilliam@nist.gov ADVERTISING John P. Greene greene@anl.gov

### Element 118

PHYSICAL REVIEW C 74, 044602 (2006)

#### Abstract:

The decay properties of 290116 and 291116, and the dependence of their production cross sections on the excitation energies of the compound nucleus, 293116, have been measured in the 245Cm(48Ca, xn)293–x116 reaction. These isotopes of element 116 are the decay daughters of element 118 isotopes, which are produced via the 249Cf+48Ca reaction. We performed the element 118 experiment at two projectile energies, corresponding to 297118 compound nucleus excitation energies of E \* = 29.2±2.5 and 34.4±2.3 MeV. During an irradiation with a total beam dose of 4.1 × 1019 48Ca projectiles, three similar decay chains consisting of two or three consecutive  $\alpha$  decays and terminated by a spontaneous fission (SF) with high total kinetic energy of about 230 MeV were observed. The three decay chains originated from the even-even isotope 294118 (E $\alpha$  = 11.65±0.06 MeV, T $\alpha$  = 0.89+1.07 –0.31 ms) produced in the 3n-evaporation channel of the 249Cf+48Ca reaction with a maximum cross section of 0.5+1.6 –0.3 pb.

#### **Figure Caption:**

FIG. 4. Time sequences in the decay chains of  $_{294}118$  (left),  $_{290}116$  (middle), and  $_{291}116$  (right) observed in the  $_{249}Cf+_{48}Ca$  and  $_{245}Cm+_{48}Ca$  reactions. The nuclei observed in cross bombardments of  $_{242}Pu$  and  $_{238}Uby$   $_{48}Ca$  are shown by arrows. The average measured  $\alpha$ -particle energies, half-lives, and SF branching ratios of the observed nuclei are shown separately for three decay chains of  $_{294}118$  and all nuclei in the chains originating from parent isotopes  $_{290}116$  and  $_{291}116$ .

#### **Comments from IUPAC Report:**

JWP ASSESSMENT: The 2006 Dubna–Livermore collaboration of Oganessian et al. produced three concordant decay chains commencing with 294118. This result was confirmed in 2012. Three other independent heavy element fusion studies served to identify and confirm the existence and decay properties of 294118 descendants 290Lv and 286Fl serving to link atomic numbers through

cross bombardments. The Dubna–Livermore 2006 collaboration [8] has satisfied the criteria for discovery and its claim is now acknowledged as validated.

# LETTER FROM THE EDITOR

To the INTDS Membership,

As Editor I would like to express my gratitude to the INTDS Board and Membership for allowing me and ANL to publish this Newsletter these past many years. I would like to welcome our colleagues at GSI who have generously offered to step forward and continue this legacy as was formally announced with Board approval at the INTDS2018 Conference. My thanks to them and also that the Newsletter would find such a great new home. That being said this will be my last Newsletter as Editor, having tried recently to address the backlog of INTDS Board Approved Minutes.

The Newsletter continues to be in need of Technical Contributions from the INTDS Membership, hopefully to be included in forthcoming issues. Our Society Newsletter really should be a vital link within our Membership. In the past it has contained many pertinent articles about target making techniques which otherwise never made it into the Proceedings. In order to keep this a relevant Newsletter we need contributions of a technical nature and therefore I urge everyone to please CONTRIBUTE!

For these last Newsletter Issues I chose a series of Cover Illustrations depicting the recent IUPAC naming of the newest heavy elements. I hope you have enjoyed them.

John P. Greene, ANL

Editor

# NEWS OF THE INTDS

## Pre-Conference 2016 Board meeting, Sunday Morning, 13 November, 2016 Protea Hotel Stellenbosch

#### Invited:

Klaus Eberhardt, klaus.eberhardt@uni-mainz.de (O: 2012 - 2016) Vice President

David Gilliam, david.gilliam@nist.gov (O: 2008 - ) Corresponding Secretary/Treasurer (absent with valid excuse)

John Greene, greene@anl.gov (O: 2012 - 2016) President/ Newsletter Editor

Hiroo Hasebe <a href="mailto:hasebe@riken.jp">hasebe@riken.jp</a> (ED: 2012-2016) Ntombi Kheswa <a href="mailto:kheswa@tlabs.ac.za">khewsa@tlabs.ac.za</a> (ED: 2012-2016)

Birgit Kindler, b.kindler@gsi.de (O: 2010 - ) Recording Secretary

Bettina Lommel, b.lommel@gsi.de (ED: 2014-2018)

Dannie Steski <u>steski@bnl.gov</u> (ED: 2012-2016) (Assistant Treasurer) Anna Stolarz anna@slcj.uw.edu.pl Past President / INTDS DataBase

Stefan Zeisler <u>zeisler@triumf.ca</u>, (ED: 2014 - 2018) Hironori Kubuki <u>kuboki@post.j-parc.jp</u> (ED. 2014-2018)

ED: elected director, O: officer

#### **AGENDA**

Welcome address JPG

1. Changes/additions to the Agenda (John)

2. Minutes of the 2015 virtual INTDS Board Meeting (Birgit)

3. INTDS Financial and Membership Status Report (Dannie)

- 4. Review/Update INTDS By-Laws,
  - a. Assistant Treasurer Position (permanent)
  - b. Our non-profit status?
  - c. Soliciting outside funds?
  - d. Incorporation (California)
  - e. Updated Mailing List

#### 5. Conferences

Status of the 2016 Conference,

(Ntombi)

- a. Proceedings/Reviewers?
- b. Last minute problems, other issues
- c. Financial support of attendees
- d. Approval of speakers and attendees for 28th conference

Report of the 2014 Conference,

(Hiroo)

e. Proceedings

(Hiroki, Hiroo)

f. Closing financial report

#### General,

g. Publishing (this & future proceedings)h. Updating the conference host guidelines(Committee)

- i. Host and site of the INTDS Conference 2018 (IUAC India)
- j. Future Conference site suggestions (FRIB, 2020)
- 6. Election of new INTDS Officers

Report of the Nominating Committee for election 2016 (Bettina)

(Klaus)

7. Status of the INTDS Newsletter (John)

a. New hosting site?

8. Status of the web site (Anna)

9. INTDS Database (Anna)

10. Awards

11. Reviewers List & Paper Assignment mtg. (John)

12. Other business

13. Closing

## Welcome address by John

Begin of the meeting 9:15 SA time:

## 1. Changes/additions to the Agenda

No changes to the

## 2. Minutes of the 2015 virtual INTDS Board Meeting

Minutes 2015 are approved.

#### 3. INTDS Financial and Membership Status Report

The INTDS credit card is always a problem. We will discard it. In future INTDS expenses will be paid with a private credit card and being reimbursed later.

David couldn't come to the conference this time. Dannie helps out as assistant treasurer for this conference.

Dannie presents the financial statement 2015:

The membership fees from Japan were transferred and are included in the treasurer's report 2015.

Dannie presents David's 2016 financial report.

Financial assistance in form of waiving the registration fee and 1.200 US\$ in cash is given to 1 person.

In the moment the overall financial situation is stable. The budget of the Japan conference was already included in the statement 2015.

## **Membership report**

The number of members is stable.

New members just coming in the society via the website or by personal contacts have to be contacted personally, perhaps by the presidents. We lost one person for this conference that was not included in the mailing list! He will be sent hard copies of the last two conferences.

#### Any questions to the reports given?

Klaus: How about fluctuations? - Stable members are ~40.

## 4. Review/Update INTDS By-Laws,

## a. Assistant treasurer position (permanent)

<u>Motion:</u> We should have the option for making assistant positions for any officers when in need. Then it would not be necessary to change the by-laws for a temporary assistance of an officer. <u>Unanimous assent.</u>

This will be added to the bylaws and the draft will be circulated at first between the board members, then the change has to be voted on by the membership. The mail with the changed by-law will be sent with a "notice of receipt" and the information, that if the email is not answered within two weeks this will be understood as an approval.

#### b. INTDS non-profit status?

The non-profit status of the INTDS is expired; David is trying to renew it. Dannie will keep track on the thing.

#### c. Soliciting outside funds?

The president could ask companies for supporting the INTS with money.

John presents the draft of a letter that could be sent to companies to ask for donations. In the moment it is not really essential to get extra money but we could start it anyway as a test case. But we have to coordinate the company list!

John can sign as Past President for the US companies. Perhaps it's better to not mention the tax status in the letter since it is unclear in the moment. The letter and possible answers should go over David's desk but the contact credentials should be those of the president or the past president.

#### d. Incorporation (California)

In the moment we need an active member of the INTDS living in California because of US corporate law which is a state law. To change the 'home state' would probably be a long term thing and we surely would have to have a lawyer to manage this.

Perhaps it would be better to ask a law firm to be the Californian contact for the INTDS. Perhaps it will be necessary that the lawyer has to be a member of the INTDS. We will ask David to take care and John will follow up.

#### e. Updating mailing list

The INTDS mailing list has to be up to date at every time! David has to provide the list of active members that then will be distributed to the whole board with a time stamp! Additionally, a contact list can be maintained. Perhaps an INTDS-cloud place would be a good idea to put all information and manage the rights. Who wants to volunteer to go into this investigation?

#### 5. Conferences

#### Status of the 2016 conference (Ntombi)

## a. Proceedings / Reviewers

Procedia will be the journal, where the 2016 proceedings will be published. There were some communication problems during the last weeks that are settled now.

The process for publishing together with a template and the time schedule for submitting the paper should be distributed to the participants of the conference soon.

What happens with papers that not even fulfill the basic requirements? Should they be rejected immediately by the reviewers? Agreed, at least for "repeated" cases.

There will be two reviewers assigned to each paper. => Added to the by-laws.

This time we will have to pay for the pages we can decide which papers should be published or not.

#### b. Last minutes problems

We have to squeeze in the membership meeting in the schedule latest on Thursday, Friday is too late! Perhaps it can be shifted by using the allocated time for cancelled talks. So the membership meeting will be on Tuesday Session 7.

## c. Financial support of attendees

We have one attendee with financial support.

## d. Approval of speakers and attendees for 28th conference

49 participants, all okay.

## Report on the 2014 conference (Hironori and Hiroo)

## e. Proceedings

Since the binding of the proceedings was more expensive than expected the production of a CD was cancelled. There will be only printed versions. Only 100 copies were printed which will perhaps not be enough. They will send copies to all participants of the conference and will send the electronic printing version to Anna. Anna will print extra versions in Warsaw and will send the extra copies to the members that were not participating the conference in 2014.

#### f. Closing financial report

The conference finance is balanced.

#### General

#### g. Publishing

We will wait how things work with Procedia. In principle it would be nice to stay with the same journal for some conferences. One problem could be the long-term availability of the papers since Procedia only guaranties 5 years online. Anna and the publishing committee are looking into it, but it seems that authors have total copyright on their papers. So the papers could be published on the INTDS-website after the 5 years.

### h. Updating the conference host guidelines

Points to be included to the Host Guidelines:

- Membership meeting has to be on Thursday latest!
- Number of travel applicants for one institution is 3 at maximum. The board decides on who will be supported depending on the quality and the relevance of the abstract.

The proceedings will be distributed to all members of the INTDS. Members are all who paid their dues
that includes the participants of the last and of the actual conference. The proceedings will also be
distributed also to emeriti and to sponsors.

At least two reviewers has to be allocated per paper

## i. Host and site of the INTDS Conference 2018 (IUAC India?)

<u>Conference in India:</u> No representative is coming to the conference. We have to ask for written confirmation from a high position person in India until end of the year! We don't have an official high-rank contact in Delhi. We will have to have an official written confirmation till end of this year from the lab director.

#### j. Future Conference site suggestions (FRIB, 2020)

Frederique Pellemoine offered MSU, USA as a possible conference site, perhaps also for 2018! Other candidates for 2020 could be Belgium, CERN, PSI Switzerland.

#### 6. Election of new INTDS Officers

Klaus will take over as president and John will step back to be past president and Anna will retire as past president. The board thanked Anna for her wonderful work.

Anna will be further on in charge for the web and the bibliography of the INTDS.

The proposition for the new vice-president is Christelle Stodel from GANIL. She accepted and the board approves the decision.

#### Report of the Nominating Committee for election 2016 (Bettina)

7 are candidates are nominated.

#### 7. Status of the Newsletter

John would be happy if someone else would volunteer for Newsletter editor since he did not manage to publish a Newsletter for a long time because of lack of time. John proposes GSI, Birgit and Bettina don't want to decide on the spot. The question is postponed to a point after the newly elected members are clear. It will be discussed in the virtual board meeting in 2017 again.

#### 8 and 9. Status of the web site and INTDS Database

(Anna)

Anna is willing to proceed with the web administration but is open for volunteers or for new ideas for the website as well as for the database. So she is doing two hard jobs in one.

Perhaps we can link some small videos of target making to the website.

Lists of available targets could also be linked to the website.

#### 10. Awards

Postponed to the next meeting 2017.

#### 11. Reviewers

Posters could also give a short paper perhaps with local reviewers.

Additional reviewers: Christelle, Goedele, Rose, Helmut Folger (Bettina),

- The reviewers have to be tougher about the form and the content of papers.
- The reviewers have to enforce the authors to give the right references.
- How will papers be rejected?
- How is the reviewing policy of Procedia? Peer review is in the responsibility of the conference organizers!
- If the two reviewers reject a paper the editors will decide: John and Ntombi

#### 12. Other business

Perhaps an INTDS-cloud place would be good idea to put all information and manage the rights.

## **Committees:**

#### By-laws:

Things to be added:

- Only active members are allowed to vote. Who paid for the conference is allowed to vote!
- Last conference and actual conference participants are allowed to vote! And they also get the proceedings.
- Voting rights and procedures are not rally clear!
- Who is electing the vice—president

## **Host Guidelines**

Nomination committee

### 13. Closing

## I.N.T.D.S. MEMBERSHIP REPORT 30 October 2016

1 Oct. 2015

30 Oct. 2016

Regular Members	134	136
Emeritus	13	13
Total	147	149

(76 regular members have paid their dues through 2016; many who did not attend the Tokyo Conference or submit dues otherwise have been retained on the active member list; there are a large number of new members from Asia, especially from Japan.)

## **Regular Membership by Continent:**

East and West Europe	64	64
North American	19	21
Asian	45	45
African	2	2
Australian	2	2
South American	0	0
Middle East	1	2

Respectively submitted,

David M. Gilliam INTDS Corresponding Secretary/Treasurer

## 2016 INTDS MEMBERSHIP MEETING

Tuesday, 15 November 2016

#### Minutes

John Greene welcomes the members and opens the meeting.

## 1. Board Election (Bettina Lommel)

The candidates are introduced and the ballots distributed and then collected by the nomination committee Bettina Lommel (chair), Hironori Kuboki and Stefan Zeisler. The nomination committee retires for the counting.

## 2. Membership and financial report status (Dannie Steski)

Dannie Steskie presents the membership report and the financial status report in assisting the absent treasurer David Gilliam.

# 3. Minutes of the virtual board meeting in 2015 and pre-conference Board meeting on 13 November 2016 (Birgit Kindler)

Birgit Kindler as recording secretary presents the report of the previous two board meetings.

## 4. Newsletter Report (John Greene)

John Greene apologizes as editor of the newsletter for not publishing a newsletter for a longer time. He invites the members again to send him contributions like lab reports, tips and tricks etc. for a newsletter.

## 5. Website/Database (Anna Stolarz)

Anna Stolarz presents the INTDS website and the bibliography. She invites the members to send her references of papers.

## Proposals from the audience:

Installing a blog or FAQ-site with problems. Perhaps the questions of the INTDS listserv could be made public and even be sorted or labeled by keywords?

Volunteers for investing time and ideas in new projects are welcome, please contact Anna.

## 6. Proceedings

### INTDS2014 Riken

Hiroo Hasebe reports that the proceedings of the INTDS2014 that took place in Tokyo in 2014 are printed and are actually distributed to the members.

## **INTDS2016 Publishing**

The proceedings of the INTDS2016 will be published in Procedia. Paper should preferably handed to the conference desk before end of the conference or be sent to

## INTDS2016@tlabs.ac.za hard deadline Jan. 1 for paper submission

#### 7. Miscellaneous

John Greene introduces the INTDS Listserve that is administrated by Powell Barber, Florida State Univ.

#### intds@lists.fsu.edu

## 8. INTDS venue 2018 (to be determined – Please Check Website)

The host for the INTDS conference in 2018 is not yet clear but will probably be decided on beginning 2017.

## Election results and introduction of the all members of the INTDS Board (in alphabetic order):

- Ntombizonke Kheswa (iThemba LABS, South Africa)
- Goedele Sibbens (EC-JRC, Belgium)
- Christelle Stodel (GANIL, France)
- Yoshio Yamazaki (J-PARC Center, France)

The new board members a welcomed to the INTDS board.

John Greene hands over the office of the president of the INTDS to Klaus Eberhardt from the University Mainz, Germany. Christelle Stodel is welcomed as new vice-president, John Greene as new past-president.

## **INTDS Board Elections 2018**

At the INTDS Membership Meeting held on 11 October, 2018 at Michigan State University Board elections were conducted by Goedele Sibbens (IRMM)

The candidates introduced themselves to the participants. The ballots were distributed and afterwards collected. The election committee assisted by Andreea Mitu retreated for counting.

The results of the Election are as follows with introduction of all INTDS Board members;

Hironori Kuboki

Bettina Lommel

Dannie Steski

All of these new members accepted the vote and were welcomed to the Board.

# OTHER TARGET NEWS



Home Information Program Exhibition & Sponsorship Tourism News

Contact Us

# **About TAT11**

The 11th International Symposium on Targeted-Alpha-Therapy (TAT11) will provide information on the newest developments in preclinical studies, clinical experiences, dosimetry and instrumentation, quality assurance, regulatory, targeting, radiochemistry, and nuclide production and supply. Participate in the latest discussions, scientific exchange and in focused networking with industry leaders from around the world.

TAT11 will be held in Ottawa, Canada April 1-5th 2019. TAT11 is jointly organized by Canadian Nuclear Laboratories and TRIUMF. TAT11 continues a successful series of international symposia on this topic initiated by the Joint Research Centre of the European Commission, including meetings in Karlsruhe (1997, 2000), Heidelberg (2002), Düsseldorf (2004), Aachen (2007), Toronto (2009), Berlin (2011), Oak Ridge (2013), Warsaw (2015) and Kanazawa (2017).

# Contact

## ➤ OUR OFFICE

- 286
   Plant
   Road
- Chalk River, Ontario, Canada K0J 1J0

## ➤ TAT11 Venue

 Fairmont Château Laurier



# Kruger National Park South Africa 1 - 5 July 2019 www.anpc2019.tlabs.ac.za



The first in the ANPC series to combine a topical nuclear physics conference with working group sessions aimed at focused discussions on select open questions in nuclear physics.

#### **Local Organising Committee**

Faïçal Azaiez (chair – iThemba LABS)
Naomi Haasbroek (iThemba LABS)
Vincent Kheswa (iThemba LABS / Univ. of Johannesburg)
Ntombizonke Kheswa (iThemba LABS)
Elena Lawrie (iThemba LABS)
Rudolph Nchodu (iThemba LABS)
Retief Neveling (iThemba LABS)
Sifiso Ntshangase (University of Zululand)
Nico Orce (University of the Western Cape)
Luna Pellegri (iThemba LABS / Univ. of the Witwatersrand)
Christine Steenkamp (Stellenbosch University)
lyabo Usman (University of the Witwatersrand)
Michelle Van Der Ventel-Bark (iThemba LABS)
Mathis Wiedeking (co-chair – iThemba LABS)
Hombakazi Wanana (iThemba LABS)

#### Conference Topics

Nuclear Astrophysics Nuclear Structure, Reactions and Dynamics Fundamental Interactions Neutron Physics Heavy Ion Physics Applied Nuclear Physics New Facilities and Instrumentation

#### **Working Group Topic**

Low-lying Dipole Modes of Excitation in Nuclei

### International Advisory Committee

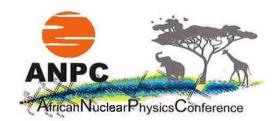
International Ad
Navin Alahari (GANIL)
Ani Aprahamian (University of Notre Dame)
Maria J.G. Borge (IEM-CSIC)
Angela Bracco (Universisty of Milan)
Francesco Cappuzzello (Univ. of Catania / INFN-LNS)
Richard Casten (Yale Univ. / FRIB / Michigan State Univ.)
Bo Cederwall (KTH)
Sotirios Charisopoulos (IAEA)
Philippe Chomaz (CEA-Saclay)
Glacomo De Angelis (LNL-INFN)
Jacek Dobaczewski (University of York)
Marco Durante (GSI)
Zsolt Fülöp (MTA)
Sydney Gales (IPN Orsay)
Donald Geesaman (ANL)
Paolo Giubeltino (GSI / FAIR)
Thomas Glasmacher (FRIB)
Andreas Görgen (University of Osio)
Paul Greenlees (University of Jyväskylä)
Muhsin Harakeh (KVI-CART)
Francesco lachello (Yale University)
Mikhali Itkis (JINR)
Robert Janssens (Univ. of North Carolina at Chapel Hill)

ommittee

Nasser Kalantar-Nayestanaki (KVI-CART)
Reiner Krücken (TRIUMF)
Karlheinz Langanke (GSI / FAIR)
Alinka Lepine-Szily (University of Saō Paulo)
Marek Lewitowicz (GANIL)
Augusto Macchiavelli (LBNL)
Adam Maj (IFJ PAN Krakow)
Jie Meng (Peking University)
Tohru Motobayashi (RIKEN)
Vandana Nanal (TIFR Mumbai)
Witek Nazarewicz (FRIB / Michigan State Univ.)
Yuri Oganessian (JINR)
Norbert Pietralla (TU Darmstadt)
Karsten Riisager (Aarhus University)
Hideyuki Sakai (RIKEN)
Achim Schwenk (TU Darmstadt)
Brad Sherrill (NSCL)
John Simpson (STFC Daresbury)
Horst Stoecker (FIAS / Goethe Univ. Frankfurt / GSI)
Andrew Stuchbery (Australia National University)
Robert Tribble (BNL)
Piet Van Duppen (KU Leuven)







## 1st Circular and Call for Abstracts

The first in the African Nuclear Physics Conference (ANPC) series combines a topical nuclear physics conference with working group sessions aimed at focused discussions on select open questions in nuclear physics.

The ANPC will be held from Monday July 1, 2019 to Friday July 5, 2019 at the Protea Hotel Kruger Gate at Kruger National Park in South Africa.

Please visit the website at http://www.anpc2019.tlabs.ac.za for more information and for the submission of abstracts by 20 February 2019.

The main topics of the ANPC 2019 conference are:

- Nuclear Astrophysics
- Nuclear Structure, Reactions and Dynamics
- · Fundamental Interactions
- Neutron Physics
- Heavy Ion Physics
- Applied Nuclear Physics
- New Facilities and Instrumentation

The topic for the working group sessions is:

Low-lying Dipole Modes of Excitation in Nuclei

We are looking forward to meeting you at Kruger National Park and please do not hesitate to contact us on anpc2019@tlabs.ac.za.

Local Organizing Committee ANPC 2019:

Faïçal Azaiez (chair) Naomi Haasbroek Ntombizonke Kheswa Vincent Kheswa Elena Lawrie Rudolph Nchodu Retief Neveling Sifiso Ntshangase Nico Orce Luna Pellegri

Christine Steenkamp Iyabo Usman Mathis Wiedeking (co-chair) Michelle Van Der Ventel-Bark Hombakazi Wanana



# Dear Colleague,

We cordially invite you to participate in the 2nd International Conference on Radioanalytical and Nuclear Chemistry (RANC-2019) to be held in Budapest, Hungary between 05-10 May, 2018.

The RANC Conference series has been established to provide a scientific forum - plenary lectures, parallel oral and poster sections - to cover the entire scope of the Journal of Radioananalytical and Nuclear Chemisty.

Registration is open at www.jrnc-ranc.com

## Call for Abstracts

Authors are invited to submit their poster and oral contributions from the following fields:

- Analytical methods and detection techniques
- Environnent
- · Effects of radiation, radiation chemistry
- Radiolabeled compounds and radiopharmaceuticals
- · Actinide chemistry, super-heavy elements
- Nuclear industry
- Separation, speciation
- Radionuclides
- Instrumentation and methodology
- · Education in radiochemistry