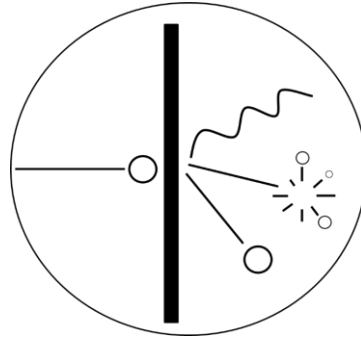


INTDS NEWSLETTER

International Nuclear Target Development Society



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Volume 49



The INTDS2022 attendees in the main auditorium at PSI

Content

1	Editorial	3
2	Target Laboratories of the World.....	4
3	Report on the INTDS 2022.....	4
4	News from the INTDS Board.....	6
4.1	Summary Board Meetings.....	6
4.1.1	Membership reports	6
4.1.2	Financial status report and financial issues	6
4.1.3	Report from the nomination committee	7
4.1.4	Frank Karasek Fund.....	7
4.1.5	INTDS web site and library	8
4.1.6	INTDS by-laws & status	8
4.1.7	INTDS conference in 2022 at PSI	8
4.1.8	Host for the next conference(s).....	9
4.1.9	Recognition awards of the INTDS.....	9
4.2	INTDS Membership Report.....	10
4.3	INTDS Financial Report	11
5	INTDS Membership Meeting 2022.....	12
5.1	Introduction.....	12
5.2	Board Elections	12
5.3	Membership and Financial Report Status	13
5.4	Minutes of the Board Meetings.....	13
5.5	Karasek Scholarship Fund	13
5.6	Report on INTDS Newsletters	13
5.7	INTDS Web Site Surfing.....	13
5.8	2022 Conference.....	14
5.9	2024 & 2026 Conferences.....	14
5.10	Miscellaneous.....	14
5.11	Election Results and Introduction of the INTDS Board	14
6	New Co-Editor Noemi Chiarina Cerboni.....	14
7	Greetings from the Editors to all INTDS Members.....	15
8	Advertising.....	16
9	Laughs for Target Makers	17

1 Editorial

Dear Members of the INTDS!

At first, we want to welcome all new members that decided to join the INTDS society at the INTDS conference at PSI. You get this newsletter for the first time and we hope you will enjoy it. Please feel free to contact us any time with critiques, new ideas or contributions!

Unfortunately, we did not manage to get a contribution to our series **Target Laboratories of the World** in time for this issue, but in the next issue you will definitely get to know another target laboratory!

After 4 years of longing, we finally met for an INTDS conference again, as you see on the conference photograph on the front page. We listened to many exciting talks and learned from new fields and techniques. We met old friends and made new contacts and some new friendships. You will find a report on the conference from Dorothea Schuman in this issue.

For all old and new members that could not join our membership meeting during the conference, we summarize the minutes of the pre-conference board meeting and of the membership meeting in this issue.

Moreover, we have the great pleasure to introduce Noemi Chiarina Cerboni from PSI, who volunteered to help us with the INTDS Newsletter and will certainly bring new ideas in 2023. For those of you that did not meet her and her technical skills at this year's conference she will introduce herself in this issue.

Please help us, keeping the newsletter interesting and informative and send contributions, ideas, advertisements, or whatever you want to share with the INTDS members to INTDS-Newsletter@gsi.de. So please, give yourself a jolt and share some of your tips and tricks with other target makers!

Bettina Lommel and Birgit Kindler

2 Target Laboratories of the World

This rubric is missing this time since the contribution could not be delivered in time. But in the next issue you surely will get to know another target laboratory of the world!

3 Report on the INTDS 2022

30th Conference of the International Nuclear Targets Development Society 25 – 30 September 2022 at PSI by Dorothea Schumann

The 30th conference of the International Nuclear Targets Development Society (INTDS2022) took place from 25 -30 September 2022 at the Paul Scherrer Institut (PSI) in Villigen, Switzerland. Around 80 participants from Africa, Asia, Europe and North America attended the conference. 51 scientific contributions were presented in 12 sessions.

Despite the importance of beam facilities, detectors and elaborated data analysis, the target is one of the indispensable components in scientific experiments aimed to investigate nuclear reactions. Targets play also an important role for the performance of nuclear installations, for instance spallation neutron sources or ion beam facilities. Correspondingly, there is a strong influence of the target quality on the quality of the final experimental result or even the performance of an entire facility. The INTDS conferences are aimed to bring together target makers and users from all over the world to report about newest developments, share their knowledge, build up synergies for efficient use of the available resources and foster their networks to be able to produce "Tailored Targets for Science". The following topics were covered:

- Separation and chemical processing of stable and radioactive isotopes
- Preparation techniques for thin films, e.g., vacuum evaporation/condensation, sputtering, electro-chemical deposition, powder distribution, rolling etc.
- Preparation and characterization of high-purity and special materials
- Development of highly material-conservative methods of preparation
- Effects of contaminants
- Target and sample encapsulation
- Radiation and beam heating effects
- Targets for radionuclide production
- Liquid and Gas Targets
- Availability of isotopes;
- Target and sample thicknesses from gas densities to kg/cm².
- Isotopically enriched and radioactive targets
- Beam charge strippers (foil, liquid, gas, plasma)
- Targets for high intensity beams
- Target characterization
- Targets for special applications (medical, industrial, controlled fusion)

The scientific program included presentations on new target preparation methods, progresses in target characterization, new results in the production of targets for medical applications, gas targets and much more

(<https://indico.psi.ch/event/7834/>). It is particularly gratifying that we had been able to establish a session on new developments in high-power target technology again this year. We also heard news about targets for ion beams and recent research results in the field of stripper films.

Besides the broad field of stable targets, which was covered in two sessions, radioactive targets play an essential role in many areas of nuclear research. In addition to the targets themselves, there is an increasing demand for the availability of radioactive substances. Therefore, both a special session on isotope production and one on actinide target production had be included.

INTDS places special emphasis on supporting young scientists. This concern was reflected both in the financial support and in the large number of contributions from students. To emphasize the importance of teaching, a special session on educational topics was established.

The conference proceedings will be published online, with open access, in the European Physics Journal Web of Conferences.

Impressions INTDS 2022 and PSI in Villingen



4 News from the INTDS Board

4.1 Summary Board Meetings

Virtual Board Meeting 2021/2022 and Pre-Conference Board Meeting 2022

A summary of items discussed and decided on is given as well as a listing of the still open discussions and items.

4.1.1 Membership reports

(Dannie Steski and Matt Gott)

The reports were presented.

4.1.2 Financial status report and financial issues

(Dannie Steski and Matt Gott)

- a. There are no big changes compared to March 2021.
- b. Still, Matt has no access to the INTDS accounts yet, since Dannie hoped to get a new tax ID soon, the old one is no longer valid. John and Matt are working on getting back the non-profit status. Dannie will now get Matt admitted on the present accounts. Matt will be the representative for the new non-profit application of the INTDS in Illinois.
- c. The INTDS fund are used to support persons for the Frank Karasek Fund. More travel grants are planned in future. Tax returns have to be paid since the INTDS is reincorporated to Illinois.
- d. Does a sustainable membership conflict with status of non-profit society? Matt will find the best way to handle this.
- e. What would be the best way to handle donations?
- f. Matt will estimate the minimum amount we should leave in the INTDS fund and will perhaps the rest to the Frank Karasek Fund.
- g. Matt wants to change the bank account from the local bank to an international one that could be accessed from every place of the world. In addition, the account of the Frank Karasek Fund does not have to be on a separate account. Matt will discuss this issue with Dannie and it can be a motion for the next VBM in 2023.
- h. Is it possible to have a membership of an institution to get access to the member website => Sustainable membership

4.1.3 Report from the nomination committee

(Goedele Sibbens)

- a. In 2021 ten persons around the world were contacted, five agreed to a candidacy, four declined, one person did not reply.
- b. In the moment, the global distribution of candidates is very biased to Europe. US and Asia are not well represented. Proposals are welcome.
- c. The final ballot presented six candidates.

4.1.4 Frank Karasek Fund

John Greene presented a summary of proposals and rules to modernize and resurrect the fund so that young people will again be trained on a regular basis in the art of target making.

- a. An official name like “The Frank Karasek Award Scholarship” should be used in any communication.
- b. The initial purpose of “promoting the art of rolling” should be extended to promote any technique in target preparation and should enable a mentorship between an INTDS member at a host institution and an INTDS member recipient.
- c. Some general guidelines should be established.
 - i. The scholarship should be awarded e.g. once a year, only for collaborative target preparation activities.
 - ii. Details of the scope of work planned should be discussed in the board prior to a decision. In the aftermath, a summary document co-authored by the host and the recipient should be prepared. This report would then appear in an issue of the INTDS Newsletter or be presented at the next INTDS conference.
 - iii. Only INTDS members should be eligible.
 - iv. The scholarship e.g. may be awarded twice to any one individual and for a maximum of two recipients per institution.
- d. How do we finance it?

- i. The scholarship should not cover all expenses, but the host institution as well as the institution of the recipient should support the stay too.
 - ii. The amount should be limited to US\$ 2.000 per award.
 - iii. An amount to be determined needs to be maintained in the fund and has to be replenished from the INTDS general fund, if necessary.
 - iv. Sponsoring through commercial members with the benefit of an ad in the newsletter could be one option.
- e. Process to apply, establishment of formal rules and criteria of selection.*
This issue is still open for discussions!

4.1.5 INTDS web site and library

(Anna Stolarz)

- a. The website was moved to an independent provider and was updated.
- b. We discussed a presentation in social media but discarded this at least for the moment.

4.1.6 INTDS by-laws & status

(John Greene, Dannie Steskie and Matt Gott)

- a. The by-laws of the INTDS have to be updated. Especially the Covid Pandemic showed that some rules do not fit to the reality anymore.
- b. Also the legal status of the INTDS society had to be renewed since it originally was incorporated in the state of California where currently no member of the board is situated.
- c. Reinstitution of the non-profit status will be clarified with the help of a lawyer.
- d. The members of the INTDS board are in the process of working through and updating the bylaws point by point. The agreed new version will then be brought to the attention of the membership.

4.1.7 INTDS conference in 2022 at PSI

(Dorothea Schumann)

Dorothea reported all questions of the conference organization with the INTDS board: Venue, announcements, budget, scientific. scope, program, social events ...

4.1.8 Host for the next conference(s)

Possible candidates for hosting the next INTDS conferences were discussed. The host for 2024 will be presented at the conference.

4.1.9 Recognition awards of the INTDS

The INTDS Award of Recognition is given to those INTDS members who have played an important role in the life of the Society and/or have realized several important developments of the target preparation.

In 2020 the awards were given to

John Greene	ANL, Argonne, USA
John Stoner	ACF CO, Inc, Arizona, USA
Roger Eykens	JRC-EU, Geel, Belgium

in an online ceremony.

4.2 INTDS Membership Report

I.N.T.D.S. MEMBERSHIP REPORT September 21, 2022

	Feb. 2022	Sept. 2022
Paid Member	63	68
Emeritus	<u>12</u>	<u>12</u>
Total	75	80
 Paid Membership by Continent:		
Europe	21	22
North America	32	34
Asia	8	9
Africa	1	2
Australia	1	1
South America	0	0
Middle East	0	0

17 members have joined since the 2018 INTDS meeting at MSU

Respectively submitted,

Dannie Steski
INTDS Corresponding Secretary/Treasurer

Matt Gott
INDS Assistant Treasurer

5 INTDS Membership Meeting 2022

5.1 Introduction

Christelle Stodel opened the membership meeting and welcomed all participants. She briefly introduced the INTDS society.

5.2 Board Elections

(Goedele Sibbens)

INTDS Board of Directors

term 2018 – 2022:

Hironori Kuboki, RIKEN, Saitama, Japan

Bettina Lommel, GSI, Darmstadt, Germany

Dannie Steski, Brookhaven National Laboratory, USA

term 2020 – 2024:

Matthew Gott, Argonne National Laboratory, USA

Ntombizonke Kheswa, iThemba LABS, South Africa

Goedele Sibbens, EC-JRC, Geel, Belgium

Masahiro Yoshimoto, J-PARC Center, Japan

The newly elected Directors will serve on the Board for a period of four years, starting September 2022.

Ballot:

Please mark 'Yes' or 'No' for each candidate. **You have up to three (3) votes**

Name (Institution, Country)	Yes	No
Nicoleta-Mihaela Florea (Horia Hulubei National Institute, Bucharest - Magurele, Romania)	<input type="checkbox"/>	<input type="checkbox"/>
Daiya Kaji (RIKEN Nishina Center, Japan)	<input type="checkbox"/>	<input type="checkbox"/>
Bettina Lommel (GSI, Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany)	<input type="checkbox"/>	<input type="checkbox"/>
Emilio Andrea Maugeri (Paul Scherrer Institute, Villigen, Switzerland)	<input type="checkbox"/>	<input type="checkbox"/>
Dannie Steski (Brookhaven National Laboratory, USA)	<input type="checkbox"/>	<input type="checkbox"/>
Wim Weterings (CERN, Switzerland)	<input type="checkbox"/>	<input type="checkbox"/>

All ballots were collected and the voting committee the election committee retired for counting.

5.3 Membership and Financial Report Status

(Matthew Gott)

See reports above (3.2 and 3.3).

5.4 Minutes of the Board Meetings

Virtual Board Meeting 2021/2022 and pre-conference Board Meeting at PSI, September, 2022 (Birgit Kindler)

See summary in 3.1.

5.5 Karasek Scholarship Fund

(Matthew Gott)

The Frank Karasek Memorial Scholarship Fund was established by the International Nuclear Target Development Society (INTDS) in 1996 in recognition of Frank's enormous contributions to the production of thin metal foils by the method of rolling. This fund is designated for the support of researchers from other laboratories engaged in target foil rolling for nuclear physics research. Frank's prodigious work is well known throughout the world [1, 2]. The large rolling mills he used at Argonne National Laboratory (ANL) are still in use in the Material Science Division.

[1] Frank J. Karasek, Proc. of the Seminar on the Preparation and Standardisation of Isotopic Targets and Foils, Harwell, England, AERE-R 5097 (1965) p.111

[2] F. J. Karasek, Nucl. Instr. and Meth. 102 (1972) 457-458

Recently the Frank Karasek Fund enabled Justin Diaz (undergrad) and Dr. Nick Esker of San Jose State University to visit Argonne National Laboratory in June 2022. They performed cold rolling of Fe-54 (and learned other techniques).

Justin returned to SJSU and taught additional students how to cold roll.

5.6 Report on INTDS Newsletters

(Birgit Kindler)

Newsletter #48 was sent on 24th of May 2022. It was sent to 72 addresses. The next newsletter is planned for December 2022. Contributions, comments, proposals, ... are welcome, editorial deadline is 30th of November.

5.7 INTDS Web Site Surfing

(Anna Stolarz)

Every member gets access to the password-secured area of the website where for example the vast bibliography of the INTDS is situated.

Please visit <https://www.intds.org/> and feel free to send remarks and propositions!

5.8 2022 Conference

(Dorothea Schumann)

2022 Edition (Dorothea Schumann, PSI) Proceedings

<https://indico.psi.ch/event/7834/page/1812-proceedings>

Deadline for submission is 31.12.2022. The review is due by 31.01.2022 and the revision by 15.02.2023. The proceedings must be submitted to the publisher by 31.03.2023

5.9 2024 & 2026 Conferences

The next INTDS conference will be organized by Oak Ridge National Lab and will most probably held at Knoxville, Tennessee!

The conference host for 2026 is still open!

5.10 Miscellaneous

Nothing to report.

5.11 Election Results and Introduction of the INTDS Board

New officers:

Bettina Lommel, GSI, Darmstadt, Germany

Emilio A. Maugeri, PSI, Villigen, Switzerland

Wim Weterings, CERN, Geneva, Switzerland

6 New Co-Editor Noemi Chiarina Cerboni



I grew up in Olivone, a little village in the Italian-speaking region of Switzerland and I am currently a PhD student in the Laboratory of Radiochemistry at the Paul Scherrer Institut, under the direct supervision of Dr. Emilio Maugeri. My PhD thesis focuses on the electrodeposition of metallic radiolanthanides' thin films from ionic liquids, which can further be used for the measurement of Auger electrons energies and branching ratios and, potentially, for nuclear cross section measurements.

My particular interest in target making leads me to investigate other types of techniques, such as molecular plating, coupled reduction or drop-on-demand inkjet printing.

With my decision of becoming newsletter's co-editor, I would like to expand my network and get to know target makers from all around the world.

Besides being an ambitious chemist and an active local politician, my passions include rhythmic gymnastics, gardening and poetry. When I am not enjoying a

glass of beer or visiting a concert of my favorite bands, I might be reading a thriller.

7 Greetings from the Editors to all INTDS Members

We wish all of you a merry Christmas, a happy New Year and a peaceful and relaxing Christmas break!



8 Advertising



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