RFH is an integrated supplier of Tantalum, Niobium, Molybdenum, Tungsten, Rhenium, Hafnium & Ruthenium and other strategic metals. We provide customers with a one-stop procurement and supply chain solution. The primary elements come from minerals sourced from all over the world, distributed to our domestic processing plants and co-produced as pure metals and master alloys, while the metal scraps are recycled by green treatment and inspection.

For Tantalum and Niobium businesses, we have RFH Recycling Metals Co., Ltd. (CID003159) and RFH Yancheng Jinye New Material Technology Co., Ltd. (CID003583) registered in the RMI Conflict-Free List.

RFH Metals is in charge of businesses throughout the supply chain, importing minerals, downstream processing and exporting metals. RFH Yancheng is a hydrometallurgical plant that specifically converts Tantalite & Columbite. RFH produces & supplies large quantities of Tantalum metal & Niobium metal with the “RFH” brand.

Contact: Mr. Liu Ming (President)
Email: Liu_ming@rfh-metals.com
Web site: www.rfh-metals.com
Contents

5 President’s Welcome
6 About the T.I.C.
7 Who is the T.I.C.?
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Phone: +32 2 649 51 58
Email: info@tanb.org
Website: www.TaNb.org
Linkedin: https://be.linkedin.com/company/t.i.c.
VAT no.: BE0414.408.447
Legal status: The T.I.C. is an AISBL under Belgian law.

Legal counsel: Jones Day
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https://www.jonesday.com/brussels/

Accountant: Bofidi Brussels
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https://www.bofidi.eu/

Auditor: JCB RE
Avenue des Héros 41, 1160 Brussels, Belgium

Cover photo credit: Shutterstock, T.I.C.

Disclaimer: Tantalum-Niobium International Study Center (T.I.C.) has made every effort to ensure that the information presented is technically correct. However, T.I.C. does not represent or warrant the accuracy of the information contained in the Annual Report or its suitability for any general or specific use. The reader is advised that the material contained herein is for information purposes only; it should not be used or relied upon for any specific or general application without first obtaining competent advice. The T.I.C., its members, staff and consultants specifically disclaim any and all liability or responsibility of any kind for loss, damage, or injury resulting from the use of the information contained in this publication.
KEMET continues to be a leader in the responsible sourcing of tantalum

ECV
Environmental Claim Validation Certificate

Vertically Integrated Tantalum Sourcing

RMAP Validated
Responsible Minerals Assurance Program

Partnership for Social & Economic Sustainability

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kemet.com
Dear Members and Friends,

I hope this note finds all members and friends of the T.I.C., and their families, safe and in good health.

The past year has been one full of ups-and-downs as we have all had to “weather” the vagaries of Covid 19. The Delta variant caught us by surprise just as we were hoping there was light at the end of the tunnel. That said, the resiliency and ingenuity of human nature has led us to a place where we are all looking to the future with hopeful anticipation. We have learned to make choices under a set of circumstances that continue to change (more than normal), and there are many who believe we must learn to live with Covid, as we do the annual flu, receiving an annual booster to negate the impact of the latest variant. Time will tell.

As I mentioned in the last annual letter, technology was a big winner in all this change, forcing us to learn to use new tools, work at a distance, and rely on infrastructure that at times was not up to the demands placed on it. Yet through all this the world kept moving forward. An unfortunate outcome of all this turmoil was that vaccines have not been available to everyone around the world, significantly and negatively impacting the turn-around time of the global economy. Yet another example that we are not all equal and we must look out for and help those who are less fortunate if we are all to move forward in lock-step.

Another issue exacerbated by the pandemic is that global supply chains remain hindered in their ability to respond to the unforeseen demands as individuals and businesses try to rebound and meet the requirements of their customers. Tantalum and niobium have not been immune to this issue. The logistical challenges in shipping Naturally Occurring Radioactive Materials (NORM) were ever-present even prior to the pandemic, and one might surmise that this will become even more difficult as carrier availability remains at a premium. As an organization we must maintain our vigilance and double efforts focused on increasing NORM shipping limits and education in this area. This has been a major focus of the T.I.C. over the past few years, and while we are making headway we will continue to focus on this area. It is difficult enough when artificial barriers are placed on raw material availability, and this is only exacerbated by existing shipping limitations.

We are marching towards this year’s in-person GA in London, and for those who will be in attendance, I look forward to once again meeting with you. I appreciate the effort you have taken to attend and please be assured the T.I.C. staff will take the necessary precautions to make this a safe event. For those members and friends who are negatively impacted by corporate travel limitations, country limitations or vaccine requirements, we will miss you and we look forward to meeting you in Geneva in 2022.

Wishing you all the best on both a personal and professional basis.

Until we can once again shake hands, please act safely and responsibly.

Daniel Persico, PhD
About the T.I.C.

Since its founding, the Tantalum-Niobium International Study Center (T.I.C. or Association) has grown and developed to encompass the changing nature of the tantalum and niobium industries and will continue in the same spirit in facing future challenges. Today our membership represents every aspect of the global tantalum and niobium industries.

The Association

- An international, non-profit association founded in 1974 under Belgian law.
- Around 90 members from 30 countries involved with all aspects of the tantalum and niobium industry supply chain (including mining, trading, processing, recycling, metal fabrication, capacitor manufacturing, medical…).
- The Association is run by its Executive Committee, whose officials are elected annually by the members. The Committee reflects the range of members’ activities and their geographic spread.
- The Committee is led by the President. Presidents have been drawn from all sectors of the industry and from many parts of the world (see page 10).
- The T.I.C.’s office is comprised of the Secretary General, the Executive Marketing Manager, the Technical Officer, and several external consultants.

Objectives

- Increase awareness and promote the remarkable properties of tantalum and niobium in all their forms.
- Disseminate information on any matter affecting that industry, excluding price and related information and any other proprietary information.
- Address major issues and challenges facing its industry, including critical raw material and conflict minerals legislation, artisanal and small-scale mining (ASM), and transporting naturally occurring radioactive materials (NORM).
- Organize a General Assembly of the membership in September or October each year for technical presentations and members’ annual general meeting. Often the location is chosen to allow a tour of a member company or industrial facility.
- Publish a quarterly newsletter, the Bulletin, covering interesting and informative articles about the T.I.C. and the global tantalum and niobium industries.
- Collect statistics from member companies (via an independent third-party to ensure confidentiality) on tantalum and niobium production, shipments and consumption. Statistics reports are shared with participating members.
Who is the T.I.C.? *

* This snapshot is based on T.I.C. membership in January 2021

Members by country

Members by location

Members by sector

Tantalum-Niobium International Study Center (T.I.C.) 2021
The Executive Committee is drawn from the membership and committee members may be, but need not also be, the delegates of member companies. The Executive Committee named here was elected by the T.I.C. members at the 61st General Assembly, and consists of (in alphabetical order of member’s surname):

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
</tr>
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<tbody>
<tr>
<td>Alex Bruno</td>
<td><a href="mailto:alex.bruno@hcstarcksolutions.com">alex.bruno@hcstarcksolutions.com</a></td>
</tr>
<tr>
<td>Fabiano Costa</td>
<td><a href="mailto:fcosta@amg-br.com">fcosta@amg-br.com</a></td>
</tr>
<tr>
<td>John Crawley</td>
<td><a href="mailto:jcrawley@rmmc.com.hk">jcrawley@rmmc.com.hk</a></td>
</tr>
<tr>
<td>Silvana Fehling</td>
<td><a href="mailto:silvana.fehling@taniobis.com">silvana.fehling@taniobis.com</a></td>
</tr>
<tr>
<td>Ronald Gilerman</td>
<td><a href="mailto:ronald.gilerman@armerchants.com">ronald.gilerman@armerchants.com</a></td>
</tr>
<tr>
<td>David Gussack</td>
<td><a href="mailto:david@exotech.com">david@exotech.com</a></td>
</tr>
<tr>
<td>Jiang Bin</td>
<td><a href="mailto:jiangb_nniec@otic.com.cn">jiangb_nniec@otic.com.cn</a></td>
</tr>
<tr>
<td>Janny Jiang</td>
<td><a href="mailto:janny@jiujiangjx.com">janny@jiujiangjx.com</a></td>
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<tr>
<td>Dharam Kotecha</td>
<td><a href="mailto:dharam@halcyonmetals.com">dharam@halcyonmetals.com</a></td>
</tr>
<tr>
<td>Raveentiran Krishnan</td>
<td><a href="mailto:raveentiran@msmelt.com">raveentiran@msmelt.com</a></td>
</tr>
<tr>
<td>Candida Owens</td>
<td><a href="mailto:candida.owens@btinternet.com">candida.owens@btinternet.com</a></td>
</tr>
<tr>
<td>Daniel Persico (President)</td>
<td><a href="mailto:dfpersico@gmail.com">dfpersico@gmail.com</a></td>
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The 2020-21 Executive Committee
The 2021 election to the Executive Committee takes place on November 15th during the Association’s annual general meeting (AGM) at the 62nd General Assembly held in London, UK. Those elected stand for one year and there is a maximum of twelve members, according to our Charter of association. Members who wish to make nominations to serve on the Executive Committee must do so at least one month before the annual general meeting.

Subteams

Subteams are advisory groups tasked by the Executive Committee with specific projects. In October 2021, the following subteams were operational:

Marketing:
- Ian Margerison
- Fabiano Costa
- Raveentiran Krishnan
- Emma Wickens

Meetings:
- David Gussack
- Ronald Gilerman
- Daniel Persico
- Emma Wickens

Supply Chain:
- John Crawley
- Raveentiran Krishnan
- Jim Maguire
- William Shannon

Statistics:
- Ian Margerison
- John Crawley
- Silvana Fehling
- Ronald Gilerman

We are always looking for enthusiastic T.I.C. members to join our range of subteams. If you are interested, please contact Emma Wickens.

Officers of the T.I.C.

At the 62nd General Assembly, held in November 2021, the officers were:

Secretary General  Emma Wickens  emma.wickens@tanb.org
Executive Marketing Manager  Ian Margerison  ian.margerison@tanb.org

The T.I.C. also works regularly with several specialist consultants in order to advance the Association’s goals. These include Ulric Schwela (NORM transport), Ally Lam (China) and Breno Rezende (Brazil).
## Presidents of the Association

<table>
<thead>
<tr>
<th>Year</th>
<th>President Name</th>
<th>Company Name</th>
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<tbody>
<tr>
<td>1974</td>
<td>Cornelius Herkströter</td>
<td>Thaisarco</td>
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<td>1975</td>
<td>Herman Becker-Fluegel</td>
<td>National Resources Trading / Tanco</td>
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<td>1976</td>
<td>Paul Leynen</td>
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<td>1977</td>
<td>Reinhard Deil</td>
<td>GfE</td>
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<td>1978</td>
<td>Joseph Abeles</td>
<td>Kawecki Berylco Industries</td>
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<td>1979</td>
<td>Brian Reynolds</td>
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<td>1980</td>
<td>George Korinek</td>
<td>Hermann C. Starck Inc.</td>
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<td>1981</td>
<td>Conrad Brown</td>
<td>Fansteel</td>
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<td>1982</td>
<td>John Linden</td>
<td>Greenbushes Tin</td>
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<td>1983</td>
<td>Robert Franklin</td>
<td>STC Components</td>
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<td>1984</td>
<td>Carroll Killen</td>
<td>Sprague Electric Company</td>
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<td>1985</td>
<td>Chikara Hayashi</td>
<td>Vacuum Metallurgical Company</td>
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<td>1986</td>
<td>Rod Tolley</td>
<td>Datuk Keramat Smelting</td>
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<td>Hans-Jürgen Heinrich</td>
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<td>Harry Stuart</td>
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<td>Peter Maden</td>
<td>Vishay Sprague</td>
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<td>Hubert Hutton</td>
<td>Sogem-Afrimet</td>
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<td>Peter Kähler</td>
<td>H.C. Starck GmbH</td>
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<td>Robert Barron</td>
<td>Cabot Performance Materials, David Maguire, KEMET</td>
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<td>KEMET Electronics</td>
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Dear Members and Stakeholders,

The last two years have been a challenging time at the T.I.C., as they have been in most industries and indeed across the world in general. While, thankfully, no member has reported the worst impacts of the pandemic, nonetheless the tantalum and niobium industry has not been spared the impact of Covid-19.

Aside from the pandemic, the situation at the T.I.C. has been quietly successful. Several long-term projects are showing excellent results, our membership is stable, and once again careful planning and cost control has produced a strong financial situation. Since our 61st General Assembly held online in October 2020, this Association has continued to invest in increasing and improving the services it offers.

We have firm foundations for the future. In particular, mention must be made of the staff's tireless work on our London conference and Dr Daniel Persico’s leadership of the Executive Committee during this challenging time.

**Membership**

An association is only ever as strong as its members and there are currently eighty-five commercial and associate members (see page 27 onwards or www.TaNb.org). At the 2020 AGM seven new corporate members were elected and two companies transferred corporate membership. The transfers were from Specialty Metals Resources S.A. to Specialty Metals Resources Limited, and from Stapleford Trading Ltd to Stapleford Minerals and Metals Ltd.

Corporate membership of the T.I.C. is open to organisations actively involved in any aspect of the niobium and tantalum industries, from explorers to miners, traders and processors, through to end users and suppliers of goods and services to the industry. Associate membership is available to organisations that are not commercially involved in our industries, such as academia, associations, government bodies and civil society.

Corporate members elected at the 2020 AGM:

- Auxico Resources Canada Inc., Canada
- Central America Nickel Inc., Canada
- CONDOR Minerals Bolivia Srl, Bolivia
- Jiangxi Tuo Hong New Material Co., Ltd, China
- Mister Oak Mining & Trading, Brazil
- Rarus Mining, Brazil
- TAM International LP, Canada

Emma Wickens, Secretary General
Since February 1975, the Association has published a quarterly journal in English, containing news, information and updates on our industry and the Association’s work. Our circulation constantly expands and today it is sent out to over 800 members and stakeholders each quarter, promoting the T.I.C.’s reputation as a trusted centre of excellence about niobium and tantalum.

This year, for the third year in a row, we published a Bulletin Review in Chinese, Japanese, Portuguese and French, in order to improve our reach and relevance to the global tantalum-niobium industry. This initiative received very positive feedback and we expect these four publications will become a regular feature.

If you would like to receive the Bulletin or any of the Bulletin Reviews (or if you wish to contribute articles or advertise in these publications) please contact the office at info@tanb.org.

Statistics
The T.I.C. statistics service is one of the many benefits of membership and we are constantly looking for ways to improve it to provide our members with greater insights into the tantalum and niobium markets. The foundation of our statistics service is data submitted by members each quarter. Members’ data is held by the independent data collector, Miller Roskell Ltd, a chartered accountant.

Also of statistical significance was the departure of David Knudson as Technical Officer earlier this year. During David’s time at the T.I.C. our statistics service saw many changes and his presentation of the previous year’s data was a regular feature at our annual General Assembly. We wish him well in his next role.

Supply Chain
In the European Union (EU) from January 1st 2021 the Conflict Minerals Regulation came into force, requiring EU importers of tin, tantalum, tungsten and gold from anywhere in the world (not just DRC and neighbouring countries, as with Dodd-Frank) to register their material and demonstrate due diligence.

To help businesses cope with the new regulation, the T.I.C. is actively engaged with the relevant competent authorities and the European Commission on this issue.
In parallel to our work with the EU we are working with the British Government to understand its position on the EU Conflict Minerals Regulation. Prior to ‘Brexit’ it was often stated that the UK wanted to leave in an orderly manner, which would include wholly adopting the EU Conflict Minerals Regulation and many other regulations.

On a related subject, the T.I.C. continued to sit on the Governance Committee of the ITSCI Programme, working closely with the International Tin Association (ITA), the other member, to ensure ITSCI maintains the highest standards of best practice.

Tarantula project
The T.I.C. is part of a consortium of 16 organisations to be awarded funding to study innovative new ways to recover niobium (Nb), tantalum (Ta) and tungsten (W) from mine by-products and processing waste streams, materials which are currently considered to be uneconomical. Full details will be reported in future Bulletins and at our 63rd General Assembly in Switzerland next year.

Transport of naturally occurring radioactive materials (NORM)
NORM is a critical subject for many T.I.C. members since many ore bodies containing tantalite also contain the radioactive elements thorium (Th) and uranium (U). For many years the T.I.C. has attended meetings of the IAEA’s Transport Safety Standards Committee (TRANSSC), at which the regulations governing NORM are considered and, if necessary, changed.

T.I.C. believes that the current exemption rate is set unnecessarily low and over the last 18 months we have been part of a TRANSSC working group that is re-examining this subject from first principles. KEMET Electronics Corp. and TANIOBIS GmbH kindly provide additional support to this project.

Special thanks must go to Roland Chavasse, Ulric Schwela (Salus Minerals Ltd) and Christian Cymorek (TANIOBIS GmbH) for their tireless work furthering the Association’s NORM goals. Regular updates will be published in the Bulletin.


**Colleagues old and new**

The last year has seen several staff changes. As mentioned previously, David Knudson resigned as Technical Officer earlier in the year. Based on his efforts, our statistics have improved significantly by identifying additional regional and global data sources from which we augment the member sourced data.

We have also seen a change of personnel in our marketing division, with Ian Margerison replacing Roland Chavas. Ian has been in the tantalum industry for 25 years and brings a wealth of industry knowledge and experience to the role. He started his career as a Development Engineer at AVX Tantalum Corporation in Paignton, UK. More recently he spent over a decade at Metalysis, where he led efforts in tantalum additive manufacturing powder development and other key projects.

As a key member of the Association's modest office Ian will play an essential role in delivering value to members and representing the Association. His overarching responsibility will be to emphasize the T.I.C. brand as the global center of excellence for tantalum and niobium. Activities specific to this goal are leading outreach efforts related to member retention and identifying and signing up new members. Additional responsibilities include design and development of the Association's quarterly and annual publications, the monthly newsletter, as well as maintaining and upgrading the quality of the T.I.C.'s website.

Roland has been with the Association for six years and on his departure Dr Daniel Persico, T.I.C. President, said that “During Roland’s time as Director the Association achieved new heights in its engagement with external stakeholders, in particular with ITSCI, RMI and the OECD. While from a marketing point of view I think we can all agree that the T.I.C.’s monthly, quarterly, and annual communications and publications have flourished as a result of his efforts. We also have the internationally recognised Anders Gustaf Ekeberg Tantalum Prize, a product of Roland's foresight and hard work”.

Both Roland and David have accepted full-time employment elsewhere in the metals industry, so please congratulate them and wish them good fortune on their new endeavours.

I look forward to working with the Executive Committee, colleagues, members and stakeholders in the year ahead to help the Association achieve its goals.

Kind regards,

Emma Wickens, Secretary General

Lasne, Belgium, November 2021

Ian Margerison

Roland Chavas
In 2018 the T.I.C. established an annual science award to recognise excellence in tantalum research and innovation, as part of our aim to increase awareness of the many unique properties of tantalum products and the applications in which they excel*.

It was named the Anders Gustaf Ekeberg Tantalum Prize (‘Ekeberg Prize’) in honour of the Swedish chemist who discovered tantalum in 1802. The medal, made by the Kazakhstan Mint from pure tantalum metal, is awarded to the lead author of the winning publication at our General Assembly each year.

**The shortlist**

This year there were seven publications shortlisted for the prize, showing the great versatility of tantalum. The subjects covered by the shortlisted publications included additive manufacturing, aqueous solution chemistries, metallurgy, superconductors, chemical processing, electronics and catalysts. Full details and links to all shortlisted publications can be found at www.tanb.org/view/prize.

**The judging procedure**

The shortlist is judged by an independent panel of experts who have been selected from around the world to provide an impartial assessment on the technical merit of the shortlisted papers. The T.I.C. acts as secretariat to the Ekeberg Prize but is not involved in the judging process.

In 2021 the T.I.C. was privileged to have on the panel (alphabetical by surname):

- **Dr Axel Hoppe**, Commerce Resources / consultant, Canada / Germany (Chair)
- **Professor Elizabeth Dickey**, North Carolina State University, United States
- **Magnus Ericsson**, Luleå University of Technology, Sweden
- **Dr Nedal Nassar**, U.S. Geological Survey (USGS), United States
- **Professor Toru Okabe**, The University of Tokyo, Japan
- **Tomáš Zedníček** Ph.D., European Passive Components Institute (EPCI), Czech Republic

* Although the T.I.C. represents and supports both tantalum and niobium equally, the Ekeberg Prize will focus only on tantalum, but this is only because CBMM’s Charles Hatchett Award (www.charles-hatchett.com) already does an excellent job of recognising niobium published research.
The 2021 winning publication

The 2021 Anders Gustaf Ekeberg Tantalum Prize ('Ekeberg Prize') was awarded to a US-Japanese team led by Dr Jason M. Davis of the Center for Materials Processing and Tribology at Purdue University, IN, USA, for its paper “Cutting of tantalum: Why it is so difficult and what can be done about it” published in the International Journal of Machine Tools and Manufacture. (reprinted in the T.I.C. Bulletin number 187, published in October 2021 and available at www.TaNb.org).

The judges’ verdict

Announcing the winner Dr Axel Hoppe stated that cutting tantalum was a subject which had interested metallurgists for decades and the paper offered important new considerations on the topic. “In a year when Covid-19 is causing so much disruption and forcing many of us to reconsider what is important in our lives, high on the list of priorities after family and friends must surely be meaningful work, such as moving closer to solving a decades-old challenge?” Dr Hoppe asked.

The panel wishes to congratulate all entrants whose papers are challenging the boundaries of current knowledge of tantalum, and which may well lead to significant breakthroughs into exciting new applications of the element.

The winning team

On receiving the Ekeberg Prize, Dr Davis said “We are honoured and humbled that the publication was chosen for the award”. The T.I.C. wishes to congratulate all entrants whose papers are challenging the boundaries of current knowledge of tantalum, and which may well lead to significant breakthroughs into exciting new applications of the element.

The authors of the winning paper are Dr Jason M. Davis, Dr Mojib Saei, Debapriya Pinaki Mohanty, Dr Anirudh Udupa, Dr Tatsuya Sugihara, and Dr Srinivasan Chandrasekar. The team mostly work at the Center for Materials Processing and Tribology at Purdue University, IN, USA, while Dr Tatsuya Sugihara is based at the Department of Mechanical Engineering, Osaka University, Japan. Dr Davis also works at the US Special Warfare and Expeditionary Systems Department, Naval Surface Warfare Center in Crane, IN, USA.

The medal for the Ekeberg Prize was manufactured from pure tantalum metal by the Kazakhstan Mint and will be awarded during the General Assembly.
# General Assemblies and Symposia

<table>
<thead>
<tr>
<th>General Assembly</th>
<th>Symposium</th>
<th>Month and year</th>
<th>City and country</th>
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<tbody>
<tr>
<td>1st</td>
<td>March</td>
<td>1974</td>
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<td>September</td>
<td>1974</td>
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<td>March</td>
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<td>1975</td>
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<td>May</td>
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<td>16th</td>
<td>October</td>
<td>1981</td>
<td>Brussels, Belgium</td>
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<td>June</td>
<td>1982</td>
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<td>1986</td>
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<td>June</td>
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<td>November</td>
<td>1988</td>
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<td>November</td>
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<td>October</td>
<td>1991</td>
<td>Philadelphia, PA, United States</td>
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<td>33rd</td>
<td>November</td>
<td>1992</td>
<td>Phuket, Thailand</td>
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<td>October</td>
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<td>Aizu-Wakamatsu, Japan</td>
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<td>October</td>
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<td>Greenville, SC, United States</td>
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<td>1997</td>
<td>Xian, Shaanxi, China</td>
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<td>Prague, Czech Republic</td>
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<td>Perth, WA, Australia</td>
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<td>Year</td>
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<td>October 2000, San Francisco, CA, United States</td>
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<td>Shanghai, China</td>
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<td>Almaty, Kazakhstan</td>
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<td>53rd</td>
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<td>October 2012, Cape Town, South Africa</td>
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<td>54th</td>
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<td>October 2015</td>
<td>Penang, Malaysia</td>
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<td>October 2016</td>
<td>Toulouse, France</td>
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<td>58th</td>
<td>7th</td>
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<td>59th</td>
<td>October 2018</td>
<td>Kigali, Rwanda</td>
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<td>60th</td>
<td>October 2019</td>
<td>Hong Kong SAR, China</td>
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<tr>
<td>61st</td>
<td>October 2020</td>
<td>online</td>
<td></td>
</tr>
<tr>
<td>62nd</td>
<td>November 2021</td>
<td>London, UK</td>
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</tr>
</tbody>
</table>

**Seller of:**
- Nb2O5, NiNb, AlNb, Nb Powder, Pure Nb metal
- Ta2O5, NiTa, Ta Powder, Pure Ta Metal
- W, Mo, V, Hf, in forms of alloy and pure metal

**Buyer of relative raw materials:**
Tantalite, Columbite, Recyclables, and other raw materials with Ta or Nb contained.

---

**Metalink Special Alloys Corp.**

Metalink Building, 8 East Jinxin Road, Jiangning Economic Development Zone, Nanjing, China 211153

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Speakers’ Biographies

Biographies are of the lead author of presentations and panellists (alphabetical by surname)

Rashad Abelson, Organisation for Economic Co-operation & Development (OECD)

Costs and value of due diligence in mineral supply chains by Rashad Abelson

Rashad Abelson is a legal expert working on the Responsible Minerals Implementation Programme in the OECD Centre for Responsible Business Conduct. Relevant projects of his include monitoring of government implementation of due diligence commitments and relevant legislative developments, fostering law enforcement cooperation on minerals related crime, and developing research tools on risks in mineral supply chains.

Dr Chandresh Agarwal, Imerys Ceramics

Panellist: NORM: Issues and solutions

Dr Chandresh Agarwal holds a PhD in Applied Chemistry and a master’s degree in chemistry backed with a professional master’s degree in Marketing Management and various postgraduate diplomas in production, operation, and finance & HRD. Dr Agarwal has three decades of professional experience. He started his career in the industrial technical field. He has worked with different well known multinational & Indian companies. He brought up new technologies and a lot of innovations in the industrial mineral field globally. Currently he is working with IMERYS performance minerals EMEA (Ceramics) as Business Development Director for the MEA region, based in Dubai. Imerys is a pioneer in Class 7 cassiterite mining and sales globally. Dr Agarwal also works very closely & is a strong believer in CSR, Blind girl hygiene is one of the programs. Dr Agarwal deeply associates with various societies including T.I.C., ICS, IIC & ICC.

Andrew Britton, Kumi Consulting

Panellist: Tantalum and niobium supply chain resilience in 2020/2021

Andrew is the founder and Managing Director of Kumi, a consultancy that specialises in responsible mineral supply chains. Kumi works at all levels of the minerals supply chain and across both industrial and precious metals, from mines through to global consumer brands, helping companies to design, implement and assess responsible sourcing practices. Kumi is at the forefront of the development and application of compliance standards and industry good practices for responsible sourcing, working with the European Commission, Organisation for Economic Co-operation & Development (OECD) and London Metal Exchange (LME) on regulatory compliance, and playing a central role in the development of responsible ASM supply chains for battery metals such as cobalt.

Tiberio Cabianca, UK Health Security Agency (UKHSA)

Panellist: NORM: Issues and solutions

Tiberio Cabianca is the Head of the Planned Exposures Group at the Centre for Radiation, Chemical and Environmental (CRCE) hazards of Public Health England. He has 30 years’ experience in radiological assessment modelling, 5 years as a member of IAEA’s Waste Safety Section of the Division of Radiation, Transport and Waste Safety. He is the current chair of the IAEA’s Methods for Radiological & Environmental Impact Assessment (MEREIA) programme and a member of the UK delegation at the Transport Safety Standards Committee (TRANSSC). Recently TRANSSC established a new working group to examine the Naturally Occurring Radioactive Material (NORM) exemption level (currently set at 10 Bq/g) and asked Mr Cabianca to chair it.
Roper Cleland, The ITSCI Programme / International Tin Association (ITA)

*Panellist: Tantalum and niobium supply chain resilience in 2020/2021*

As ITSCI Programme Manager, Roper is responsible for delivery of the joint-industry programme. Roper has worked in both business and NGO capacities with the extractives sector, including corporate risk assessment for oil companies in East Africa. She has co-authored human rights guidance and reports at the UN and international policy level and consulted for extractives and manufacturing on responsible business practice. Roper started her career in NGO roles focused on private sector and indigenous rights. She has a MA in Violence, Conflict and Development from the School of Oriental and African Studies and she graduated Cum Laude from Vassar College.

Mickaël Daudin, The ITSCI Programme / Pact

*Panellist: Tantalum and niobium supply chain resilience in 2020/2021*

Mickaël Daudin is Deputy Director, Mines to Market and joined Pact in 2015. Mickaël manages the implementation of International Tin Supply Chain Initiative (ITSCI). He also leads Pact’s engagement with the Voluntary Principles Initiative on Security and Human Rights. Prior to Pact, Mickaël worked as an advocate to the German government for Médecins Sans Frontières. He holds a Master of Arts in Global Studies (International Relations, Global History, Regional Studies, and Social Sciences) from the Universities of Leipzig, Germany and Wroclaw, Poland.

Dr Jason M. Davis, Purdue University & Naval Surface Warfare Center

*Cutting of tantalum: Why it is so difficult and what can be done about it by Dr Jason M. Davis, Dr Mojib Saei, Debapriya Pinaki Mohanty, Dr Anirudh Udupa, Dr Tatsuya Sugihara and Dr Srinivasan Chandrasekar*

Dr Jason M. Davis is an engineer at Naval Surface Warfare Center, Crane Division in the Special Warfare and Expeditionary Systems Department with expertise in small arms and small arms accessories. He earned his Ph.D. in industrial engineering from Purdue University in 2020 with research interests in manufacturing and materials processing. Principal research contributions are in surface effects in plasticity and mechanoochemical phenomena in corrosion resistant metals. He is the lead author of the paper “Cutting of tantalum: Why it is so difficult and what can be done about it”, which won the 2021 Ekeberg Prize.

Michael Knight, TTI Inc.

*Moore’s Law and the electronic component industry*

Michael Knight is President of the Exponential Technology Group and Corporate Senior Vice President of business development at TTI Inc., a Berkshire Hathaway Inc. subsidiary. Michael has worked in the electronic components industry since the mid-1980s when he worked for Western Microtechnology, a pioneer in semiconductor distribution. He has held a variety of national and global leadership roles in both private and public companies. Prior to joining TTI in 2004, Knight worked for several electronic component distributors and manufacturers, and was a founder, President and COO of Substrate Technologies Inc., an advanced semiconductor substrate manufacturing company. Knight holds several patents in impedance-controlled high speed interconnect systems. His day job includes sourcing and leading TTI’s acquisition efforts, aimed at diversifying its business, and managing the Exponential Technology Group which is comprised of five businesses that specialize in contract electronic product design (with a heavy focus on IoT) and leading-edge semiconductor distribution for the communications, automotive, IoT and industrial market segments.
Dharam Kotecha, Halcyon Inc.

Panellist: Tantalum and niobium supply chain resilience in 2020/2021

Dharam moved to Bukavu, DRC in 2014, after leaving a career as an Equity and Commodity Trader at a global investment bank in London to join the third-generation family business. The Kotecha family is deeply rooted in various industries from plastics manufacturing to foodstuff distribution in Eastern DRC, having been established since 1962. Dharam aims to make Halcyon, Inc. a symbol of conflict-free and sustainable mineral trade – from forging sustainable tantalum, tin and tungsten supply chains to educating local miners and traders on the implementation of practical due diligence and traceability measures on the ground. Dharam holds a master’s degree from London Business School and a bachelor’s degree from the University of Warwick in the UK.

Prof. Jason Love, University of Edinburgh

Tantalum recycling by solvent extraction: chloride is better than fluoride by Jason Love, Luke Kinsman, Rosa Crevecoeur, Amrita Singh-Morgan, Bryne Ngwenya and Carole Morrison

Jason Love is Professor of Molecular Inorganic Chemistry at the University of Edinburgh and Fellow of the Royal Society of Chemistry. His research focuses on sustainable and circular chemistry, including the extraction and recycling of metals. He has published 140 peer-reviewed articles and delivered over 45 invited lectures since 2010 including ‘Mining the Scrapheap’ at New Scientist Live (2018). He was awarded the 2020 Anders Gustaf Ekeberg Tantalum Prize for the publication "Tantalum Recycling by Solvent Extraction: Chloride Is Better than Fluoride". He was Head of Inorganic Chemistry at Edinburgh (2014-19), the chair of the RSC Coordination and Organometallic chemistry Discussion Group (CODG, 2016-20), and visiting professor at the Technical University Munich, Germany (2015) and Osaka University, Japan (2019-20).

Robert Marchiando, H.C. Starck Performance Metal Solutions

Niobium rod preforms for low temperature superconductors in fusion energy by Robert Marchiando

Robert Marchiando is the Business Development Director for Aerospace, Defense and New Energy. He has thirty years of Sales and Marketing experience with unique metal and ceramic performance materials and has been with H.C. Starck for six years. He holds a B.S. in Ceramic Engineering from Alfred University, a M.S. in Electronic Ceramic Science and Advanced Management from Wharton.

Ian Margerison, Tantalum-Niobium International Study Center (T.I.C.)


Ian Margerison has been in the tantalum industry for 25 years and started his journey with AVX tantalum division in Paignton, UK. Initially he was the lead development engineer for the niobium oxide capacitors and worked on the highest CV/g tantalum powders in the world’s smallest tantalum capacitors (TAC). Subsequently he then spent over a decade at Metalysis, a University of Cambridge start-up company based in the UK, where he built up the tantalum capacitor grade production line, before turning to focus on commercialising the Cambridge FFC product lines in superalloys, high entropy alloys and specialist titanium alloys. Previously, Ian has been a member of the T.I.C. Executive Committee and chaired the Marketing Subteam. Ian joined the T.I.C. staff in October 2021.
Michael Meier, Orano Nuclear Packages and Services
Panellist: NORM: Issues and solutions
Michael Meier has over 15 years of experience in Class 7 international freight forwarding activities for ORANO NPS, technical management (international safety and physical protection regulations), management of regulatory deviations / transport dysfunctions and international logistic schemes for radioactive and nuclear shipments. He supports business developments around the world for Class 7 and specially for the maritime transport by liner, coordination of the editorial staff for technical report meetings, and the study of all new logistic schemes for Class 7 flows. Since 2011, he has been in charge of the management of the CMA CGM partnership and has considerable experience of maritime transport, managing +/-800 Class 7 containers loaded on vessels and opening ports for Class 7. He regularly meets with port authorities and other key stakeholders.

William Millman, Mines, Minerals, Metals & Markets Ltd
Panellist: Tantalum and niobium supply chain resilience in 2020/2021
Founder and MD of an independent Ta and Nb industry consultancy - Mines, Minerals, Metals & Markets Limited since July 2016 located in the UK. Over a four-decade long, wide-ranging career in the tantalum-niobium industry, cumulating in my retirement from AVX Corporation, headquartered in Greenville SC in July 2016 as Technology & Quality Director, reporting to the AVX President. Three-term President of the Tantalum-Niobium International Study Center (T.I.C.) terms 1997-98, 2004-05, 2005-06. T.I.C. Executive Committee member for 29 years. Broad range of responsibilities within the industry and latterly around supply-chain dynamics and responsible secure sustainability.

Ulric Schwela, Salus Mineralis Ltd
Denials revisited: new momentum and ideas in addressing denial of shipment by Ulric Schwela and Panellist: NORM: Issues and solutions
Ulric Schwela is an independent consultant in regulatory compliance for the management and transport of Naturally Occurring Radioactive Materials (NORM). He has over 20 years experience in advising companies and institutes in NORM regulation and how to apply this to the practical everyday matter of extracting, handling and transporting these radioactive materials. Collaborations have included small enterprises, large corporations and international organisations. Previously he spent 11 years at the T.I.C. as Technical Officer overseeing the statistics collection, transport issues and responsible sourcing supply chain, and 7 years at AH Knight as Technical Manager responsible for sampling matters and radiation protection. Most recently he has worked with the IAEA in planning and delivering conferences, including NORM X due in 2022.

Suzanne Shaw, Roskill Information Services Ltd
Global economic outlook: What next for metals markets
Suzanne graduated with an MSci in Geoscience from Royal Holloway, University of London in 2006 and joined Roskill in 2007. She specialises in analysis of natural & synthetic graphite, fluorspar, rare earths and tantalum and is the author of numerous reports on these industries. Suzanne became Deputy Manager of the Strategic Minerals Division of Roskill in 2018 prior to the company’s acquisition by Wood Mackenzie in June 2021 and is currently helping to manage the development of new Market Service products within Wood Mackenzie’s Metals & Mining business.
Anna Stancher, Responsible Minerals Initiative (RMI)

Expanding customer and market expectations of minerals due diligence – an update on the Responsible Minerals Assurance Process (RMAP) & the Responsible Minerals Initiative (RMI)

by Anna Stancher and Marianna Smirnova

Anna Stancher is a Project Manager at the RBA’s Responsible Minerals Initiative (RMI). She brings to the RMI expertise in standards and impact monitoring, with 10 years working experience in development cooperation and vast international exposure in sustainability issues and private sector development. Prior to the RMI Anna focused on strategy and innovation at Amfori, value chains at the GIZ, and industrial development at UNIDO.

Dr Melanie Stenzel, TANIOBIS GmbH

Development of novel spherical multinary alloy powders containing tantalum and niobium for optimization of intrinsic material properties in AM, by Melanie Stenzel, Bahar Fayyazi, Markus Weinmann and Christoph Schnitter

Dr Stenzel graduated in 1996 in Chemistry at the Technical University in Clausthal, Germany. In 1999, she made her PhD in Polymer chemistry by working on kinetic analysis using thermo-analytical methods. Beginning of 2000 she joined EPCOS as development engineer developing niobium capacitors for four years. After another two years working at a start-up company in the recordable DVD business, a big interest in electronic materials brought her back into the tantalum industry by working for H.C. Starck as application engineer for capacitor materials starting in 2006. In 2008, she took over the responsibility for the Strategic Marketing and New Business Development for Tantalum & Niobium Products. She also initiated developing Additive Manufacturing activities for tantalum and niobium powders, as well as compounds and chlorides.
T.I.C.’s 63rd General Assembly
(conference and AGM) will take place in

Geneva

Switzerland, October 16th - 19th 2022

Full details will be published on www.TaNb.org and in the Bulletin quarterly journal in due course.

If you are interested in making a presentation at the T.I.C.’s 63rd General Assembly in October 2022 please contact info@tanb.org by March 31st 2022.
## Directory of Members

**A&R Merchants**  
Address: 2101 NW 93rd Avenue, Doral FL 33172, United States  
Email: ronald.gilerman@armerchants.com  
Website: www.armerchants.com  
Activity: Recycling, Trading

**Advanced Material Japan Corp.**  
Address: Sanno park Tower 12F, 2-11-1 Nagata-cho, Chiyoda-ku, Tokyo 100-6112, Japan  
Email: dkawamata@amjc.co.jp  
Website: www.amjc.co.jp/English  
Activity: Trading

**Advanced Metallurgical Group N.V. (AMG)**  
Address: Building 200, 435 Devon Park Drive, Wayne, PA 19087, United States  
Email: fcosta@amg-br.com  
Website: www.amg-nv.com  
Activity: Mining, Processing

**Alfred H. Knight International Ltd**  
Address: Pegas House, Kings Business Park, Prescot, Knowsley, L34 1PJ, United Kingdom  
Email: paul.chew@ahkgroup.com  
Website: www.ahkgroup.com  
Activity: Assaying

**Argus Media Ltd**  
Address: Lacon House, 84 Theobald’s Road, London WC1X 8NL, United Kingdom  
Email: london@argusmedia.com  
Website: www.argusmedia.com  
Activity: Research and Consultancy

**ArrowMetals Asia Pte Ltd**  
Address: 3 Anson Road, #14-02 Springleaf Tower, Singapore 079909, Singapore  
Email: Dkilibarda@arrowmetals.com  
Website: www.arrowmetals.com  
Activity: Trading

**AS International Corporation Ltd**  
Address: Unit 2b, Olympic Way, Sefton Business Park, Liverpool L30 1RD, United Kingdom  
Email: Secretary@alexstewartinternational.com  
Website: www.alexstewartinternational.com  
Activity: Analytical, sampling and inspection services

**ATI Specialty Alloys & Components**  
Address: P.O. Box 460, Albany, Oregon 97321, United States  
Email: Aresh.Toumadje@ATImetals.com  
Website: www.ATImetals.com  
Activity: Superalloys
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Email</th>
<th>Website</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australian Strategic Materials Ltd</strong></td>
<td>Ground Floor, 89 Burswood Road, Burswood, WA 6100, Australia</td>
<td><a href="mailto:lcardillo@asm-au.com">lcardillo@asm-au.com</a></td>
<td><a href="http://www.asm-au.com">www.asm-au.com</a></td>
<td>Nb Mining, Processing</td>
</tr>
<tr>
<td><strong>Auxico Resources Canada Inc.</strong></td>
<td>201 Notre Dame West, Suite 500, Montreal QC, H2Y 1T4, Canada</td>
<td><a href="mailto:christoph.ebeling@covemin.com">christoph.ebeling@covemin.com</a></td>
<td><a href="http://www.auxicoresources.com">www.auxicoresources.com</a></td>
<td>Mining</td>
</tr>
<tr>
<td><strong>B.W. Minerals (s) Pte Ltd</strong></td>
<td>9 Temasek Boulevard, 31/F, Tower 2, Suntec city, Singapore 038989, Singapore</td>
<td><a href="mailto:bwminerals@bwm.com.sg">bwminerals@bwm.com.sg</a></td>
<td><a href="http://www.hhezhong.com">www.hhezhong.com</a></td>
<td>Trading</td>
</tr>
<tr>
<td><strong>CBMM</strong></td>
<td>Avenida das Nações Unidas, 12.901, 23º andar, Torre Oeste, Brooklin Novo, São Paulo, 04578-910, Brazil</td>
<td><a href="mailto:yuri.miranda@cbmm.com">yuri.miranda@cbmm.com</a></td>
<td><a href="http://www.cbmm.com">www.cbmm.com</a></td>
<td>Nb Mining, Processing</td>
</tr>
<tr>
<td><strong>Central America Nickel Inc.</strong></td>
<td>201 Notre Dame West, Suite 500, Montreal QC, H2Y 1T4, Canada</td>
<td><a href="mailto:christian.falk@covemin.com">christian.falk@covemin.com</a></td>
<td><a href="http://www.centralamericanickeluaex.com">www.centralamericanickeluaex.com</a></td>
<td>Mining</td>
</tr>
<tr>
<td><strong>Chee Ng Minerals Sdn Bhd</strong></td>
<td>22½ Mile Stone, Ipoh-Kampar Road, 31900 Kampar, Perak, Malaysia</td>
<td><a href="mailto:cheengminerals@gmail.com">cheengminerals@gmail.com</a></td>
<td>n/a</td>
<td>Processing</td>
</tr>
<tr>
<td><strong>Chemaf sarl</strong></td>
<td>144 Avenue Usoké, C/Kampemba, Lubumbashi, Democratic Republic of Congo</td>
<td><a href="mailto:shiraz@shalina.com">shiraz@shalina.com</a></td>
<td><a href="http://www.chemaf.com">www.chemaf.com</a></td>
<td>Mining</td>
</tr>
<tr>
<td><strong>Chepetsky Mechanical Plant</strong></td>
<td>7 Belov, Glazov city, Udmurt Republic, 427622, Russia</td>
<td><a href="mailto:chmz@rosatom.ru">chmz@rosatom.ru</a></td>
<td><a href="http://www.chmz.net">www.chmz.net</a></td>
<td>Secondary Processing</td>
</tr>
</tbody>
</table>
D Block Metals LLC
Address: 1111 Jenkins Road, Gastonia, NC 29052, United States
Email: craig@dblockmetals.com
Website: www.dblockmetals.com
Activity: Recycling

Duoluoshan Sapphire Rare Metal Co. Ltd of Zhaoqing
Address: No. 83, South of Sihui Avenue, Sihui City, Guangdong, 526200, China
Email: dlsnsy.aliyun.com, dls_purchase@163.com
Website: www.zqdls.com
Activity: Processing

EcoWhite Trading Ltda
Address: Rua Barretos 1191, Vila Elisa, Ribeirão Preto, SP 14075-000, Brazil
Email: gerencia@ecowhite.com.br
Website: www.ecowhite.com.br
Activity: Mining, Processing, Recycling

Exotech, Inc.
Address: 1851 Blount Road, Pompano Beach, FL 33069, United States
Email: exotech@exotech.com
Website: www.exotech.com
Activity: Recycling

F&X Electro-Materials Ltd
Address: Yaxi Industrial Development Zone, Xinhui City, Guangdong 529152, China
Email: xyz@uil.com.hk
Website: www.fxelectro.com
Activity: Processing

FIR Metals & Resource Ltd
Address: Jiulong Industrial Zone, Yanling, Zhuzhou, Hunan 412500, China
Email: tang396919@hotmail.com
Website: en.chinanban.com
Activity: Processing

Globe Metals & Mining Ltd
Address: Unit 1, 26 Elliott Street, Midvale, WA 6056, Australia
Email: ajs@globemm.com
Website: www.globemm.com
Activity: Nb Mining

Guangdong Rising Rare Metals-EO Materials Ltd
Address: 2 Kaifa Avenue, South District, Qingyuan Huaqiao Industrial Park, Yingde, Guangdong Province, 511500, China
Email: zh_ctns@126.com
Website: www.gsxc723.com
Activity: Processing
H.C. Starck Inc.
Address: 45 Industrial Place, Newton, MA 02461, United States
Email: joseph.sheehan@hcstarcksolutions.com
Website: www.hcstarcksolutions.com
Activity: Secondary Processing

Halcyon Inc.
Address: Mazaya Business Avenue AA1, Level 41, Jumeirah Lake Towers Embankment, P.O. Box 214745, Dubai, United Arab Emirates
Email: admin@halcyonmetals.com
Website: www.halcyonmetals.com
Activity: Trading

ICD Alloys & Metals
Address: 3946 Westpoint Blvd., Winston Salem, NC 27103, United States
Email: steve@icdalloys.com
Website: www.icdalloys.com
Activity: Processing

Imerys Ceramics France
Address: 43 Quai de Grenelle, 75015 Paris, France
Email: chandresh.agarwal@imerys.com
Website: www.imerys-ceramics.com
Activity: Nb Mining, Ta Mining

International Conference on the Great Lakes Region (ICGLR)
Address: Boulevard du Japon 38, B.P. 7076, Bujumbura, Burundi
Email: secretariat@icglr.org
Website: www.icglr-rnr.org
Activity: Associate Member / Trade association

Jiangxi Dinghai Tantalum & Niobium Co., Ltd
Address: 98 Huijibian Road, Fengxin County, Jiangxi Province, 330703, China
Email: jocelynliu@qq.com
Website: www.dhtn.cn/tn/ggjjeng.asp
Activity: Processing

Jiangxi Tuo Hong New Material Co., Ltd
Address: No.3 Chunyi Road, Economic Development Zone, Yichun, Jiangxi 336000, China
Email: jxthxc@sina.com
Website: www.jxthxc.com
Activity: Processing

Jiujiang Fuxing Tai Trade Co., Ltd
Address: Room 1002, building A, North Area, Lu Feng Xiao Qu, Jiujiang, Jiangxi 332000, China
Email: jiujiangfuxingtai@vip.163.com
Website: www.jjftxt.cn
Activity: Trading
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Email</th>
<th>Website</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jiujiang Jinxin Non-ferrous Metals Co. Ltd</strong></td>
<td>No.018, QinHu Avenue, BinJiang East Road, XunYang District, JiuJiang City, JiangXi Province (JiuJiang Petrochemical Industrial Park), China</td>
<td><a href="mailto:nancy@jiujiangjx.com">nancy@jiujiangjx.com</a>, <a href="mailto:janny@jiujiangjx.com">janny@jiujiangjx.com</a></td>
<td><a href="http://www.jiujiangjx.com">www.jiujiangjx.com</a></td>
<td>Processing</td>
</tr>
<tr>
<td><strong>Jiujiang Tantreb Co., Ltd</strong></td>
<td>No. 62 Jiuhu Road, Jiujiang City, Jiangxi Province 332014, China</td>
<td><a href="mailto:import@jjtanbre.com.cn">import@jjtanbre.com.cn</a></td>
<td><a href="http://www.jjtanbre.com.cn/english">www.jjtanbre.com.cn/english</a></td>
<td>Processing</td>
</tr>
<tr>
<td><strong>Jiujiang Zhongao Tantalum &amp; Niobium Co. Ltd</strong></td>
<td>801 East Binjiang Road, Jiujiang City, Jiangxi Province, China</td>
<td><a href="mailto:tonyzatanb@qq.com">tonyzatanb@qq.com</a></td>
<td><a href="http://www.zatanb.com">www.zatanb.com</a></td>
<td>Processing</td>
</tr>
<tr>
<td><strong>KEMET Electronics Corp.</strong></td>
<td>KEMET Tower, 1 East Broward Blvd, 2nd floor, Fort Lauderdale, FL 33301, United States</td>
<td><a href="mailto:communications@kemet.com">communications@kemet.com</a></td>
<td><a href="http://www.kemet.com">www.kemet.com</a></td>
<td>Capacitor Manufacture, Processing</td>
</tr>
<tr>
<td><strong>Krome Commodities Limited</strong></td>
<td>23 Ashburton Avenue, Ilford, Essex IG3 9ET, United Kingdom</td>
<td><a href="mailto:psmony48@gmail.com">psmony48@gmail.com</a></td>
<td><a href="http://www.kromecommodities.com">www.kromecommodities.com</a></td>
<td>Trading</td>
</tr>
<tr>
<td><strong>Malaysia Smelting Corporation</strong></td>
<td>27 Jalan Pantai, 12000 Butterworth, Malaysia</td>
<td><a href="mailto:msc@msmelt.com">msc@msmelt.com</a></td>
<td><a href="http://www.msmelt.com">www.msmelt.com</a></td>
<td>Tin Smelting</td>
</tr>
<tr>
<td><strong>MERSEN Deutschland Linsengericht GmbH</strong></td>
<td>Lagerhausstrasse 7-9, 63589 Linsengericht, Germany</td>
<td><a href="mailto:tobias.schnurpfeil@mersen.com">tobias.schnurpfeil@mersen.com</a></td>
<td><a href="http://www.mersen.com">www.mersen.com</a></td>
<td>Design and manufacture of Ta components and equipment</td>
</tr>
<tr>
<td><strong>Metal Do Co. Ltd</strong></td>
<td>ONTEX Namba Bld. 11F, 2-2-45, Minatomachi, Naniwa-ku, Osaka 556-0017, Japan</td>
<td><a href="mailto:metaldo@raremetal.co.jp">metaldo@raremetal.co.jp</a></td>
<td><a href="http://www.raremetal.co.jp/en">www.raremetal.co.jp/en</a></td>
<td>Trading</td>
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<tr>
<td>Company Name</td>
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</tr>
<tr>
<td>Metalink International Co. Ltd</td>
<td>Metalink Building, 8 East Jinxin Road, Jiangjun Avenue, Jiangning Economic Development Area, Nanjing, 211153, China</td>
<td><a href="mailto:mabuyang@metalink.com.cn">mabuyang@metalink.com.cn</a></td>
<td><a href="http://www.metalink.com.cn/en">www.metalink.com.cn/en</a></td>
<td>Ore processing, Pure metals refining, Master alloys, Special alloys, Recycling</td>
</tr>
<tr>
<td>Metallurgical Products India Pvt. Ltd</td>
<td>T-27, MIDC Industrial Area – Taloja, District Raigad, Maharashtra 410208, India</td>
<td><a href="mailto:vkumar@mpil.co.in">vkumar@mpil.co.in</a></td>
<td><a href="http://www.mpil.co.in">www.mpil.co.in</a></td>
<td>Processing</td>
</tr>
<tr>
<td>Metherma KG</td>
<td>Arnheimerstrasse 109, 40489 Düsseldorf, Germany</td>
<td><a href="mailto:molybdenum@metherma.de">molybdenum@metherma.de</a></td>
<td><a href="http://www.metherma.de">www.metherma.de</a></td>
<td>Recycling, Trading</td>
</tr>
<tr>
<td>Mines, Minerals, Metals &amp; Markets Ltd</td>
<td>229 Dartmouth Road, Paignton, Devon, TQ4 6LG, United Kingdom</td>
<td><a href="mailto:w.millman@minesmineralsmetalsmarkets.com">w.millman@minesmineralsmetalsmarkets.com</a></td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Mining Minerals Resources Sarl</td>
<td>588 Route de Kipushi, Commune Annexe, Lubumbashi, Democratic Republic of Congo</td>
<td><a href="mailto:geoffrey@somika.com">geoffrey@somika.com</a></td>
<td>n/a</td>
<td>Mining</td>
</tr>
<tr>
<td>Minor Metals Trade Association (MMTA)</td>
<td>3-4 Bower Terrace, Tonbridge Road, Maidstone, Kent ME16 8RY, United Kingdom</td>
<td><a href="mailto:freya@mmta.co.uk">freya@mmta.co.uk</a></td>
<td><a href="http://www.mmta.co.uk">www.mmta.co.uk</a></td>
<td>Associate Member / Trade association</td>
</tr>
<tr>
<td>Mister Oak Mining &amp; Trading</td>
<td>Padre Julio Maria Lombaerd Avenue, 1951, Macapá City, Amapá State, Brazil</td>
<td><a href="mailto:trade@misteroak.com.br">trade@misteroak.com.br</a></td>
<td><a href="http://www.misteroak.com.br">www.misteroak.com.br</a></td>
<td>Mining</td>
</tr>
<tr>
<td>Mitsui Mining &amp; Smelting Co. Ltd</td>
<td>Gate City Ohsaki West Tower, 19th floor, 1-11-1 Osaki, Shinagawa-ku, Tokyo, 141-8584, Japan</td>
<td><a href="mailto:sakada@mitsui-kinzoku.com">sakada@mitsui-kinzoku.com</a></td>
<td><a href="http://www.mitsui-kinzoku.com/en">www.mitsui-kinzoku.com/en</a></td>
<td>Processing</td>
</tr>
</tbody>
</table>
MTU Aero Engines AG
Address: Dachauerstrasse 665, 80995 München, Germany
Email: Dominik.PITZ@mtu.de
Website: www.mtu.de/en
Activity: Aerospace Alloys, User

Ningxia Orient Tantalum Industry Co., Ltd
Address: 119 Yejin Road, Dawukou District, Shizuishan City, Ningxia 753000, China
Email: jiangb_nniec@otic.com.cn
Website: www.otic.com.cn
Activity: Processing

NPM Silmet OÜ
Address: Keskstr 2, 40231 Sillamäe, Estonia
Email: j.ignatova@neomaterials.com
Website: www.neomaterials.com
Activity: Processing

Pilbara Minerals Limited
Address: Level 2, 88 Colin Street, West Perth, Australia
Email: agray@pilbaraminerals.com.au
Website: www.pilbaraminerals.com.au
Activity: Ta Mining

Plansee SE
Address: Metallwerk-Plansee-Str. 71, 6600 Reutte, Austria
Email: Sandra.Horninger@plansee.com
Website: www.plansee.com
Activity: Secondary Processing

Rarus Mining
Address: Rua Vinte de Janeiro 1019, Boa Viagem, Recife, PE 51130-120, Brazil
Email: marinacavalcanti@rarusmining.com
Website: www.rarusmining.com
Activity: Mining

RC Inspection Metals B.V.
Address: Gustoweg 66, 3029 AS Rotterdam, Netherlands
Email: info@rc-inspection.com
Website: www.rc-inspection.com
Activity: Assaying

Refractory Metals Mining Co. Ltd
Address: West Wing, 2/F, 822 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong
Email: info@rmmc.com.hk
Website: n/a
Activity: Mining, Trading
**Resind Indústria e Comércio Ltda**
Address: Rodovia 265 Km 264, Distrito Industrial, Caixa Postal 157, São João del Rei, MG 36315-000, Brazil
Email: almirclemente@resind.com.br
Website: www.resind.com.br
Activity: Secondary Processing

**Responsible Minerals Initiative (RMI)**
Address: 1725 Duke St, Suite 300, Alexandria, VA 22314, United States
Email: RMI@responsiblebusiness.org
Website: www.responsiblemineralsinitiative.org
Activity: Associate Member / Trade association

**RFH Recycling Metals Co. Ltd**
Address: 1507 Huijie Plaza, NO.268 Zhongshan Road, Nanjing 210008, China
Email: liu_ming@rfh-metals.com
Website: www.rfh-metals.com
Activity: Processing

**Roskill Information Services Ltd**
Address: 54 Russell Road, London SW19 1QL, United Kingdom
Email: info@roskill.com
Website: www.roskill.com
Activity: Research and Consultancy

**Rwanda Mines, Petroleum and Gas Board (RMB)**
Address: KN 4 Ave, Kigali, Rwanda
Email: Yamina.Karitanyi@rmb.gov.rw
Website: www.rmb.gov.rw
Activity: Associate Member / Trade association

**Rwanda Mining Association (RMA)**
Address: P.O. Box 1856, Kigali, Rwanda
Email: jeanmalic@yahoo.fr
Website: rma.org.rw
Activity: Associate Member / Trade association

**SAMWOOD NEO Inc.**
Address: 3F, No.3 Hayakawa Bldg., 2-2, Kandatacho, Chiyoda-ku, Tokyo, Japan
Email: satomi@sw-neo.com
Website: sw-neo.com
Activity: Recycling, Trading

**Shalina Resources Limited**
Address: 30th Floor, Almas Tower, Jumeirah Lake Towers, P.O. Box 340575, Dubai, United Arab Emirates
Email: uday.shetty@shalina.com
Website: www.shalinaresources.com
Activity: Mining
Solikamsk Magnesium Works, JSC
Address: 9 Pravda Street, 618541 Solikamsk, Permkiy Krai, Russia
Email: sales@smw.ru
Website: www.smw.ru
Activity: Processing

Specialty Metals Resources Ltd
Address: Room 3602, China Resources Building, 26 Harbour Road, Wanchai, Hong Kong
Email: quentin.lamarche@smr.hk
Website: www.smr.hk
Activity: Trading

Stapleford Minerals and Metals Limited
Address: Wayside, Stapleford Road, Stapleford Abbots, Romford, Essex RM4 1EJ, United Kingdom
Email: jim@staplefordtrading.co.uk
Website: www.staplefordminmet.co.uk
Activity: Trading

SXMINTEC
Address: 5th Floor Tien Chu Commercial Building, 173-174 Gloucester Road, Wanchai, Hong Kong
Email: george.song@sxmintec.com
Website: www.sxmintec.com
Activity: Trading

Taike Technology (Suzhou) Co. Ltd
Address: No. 20 Chengyang Road, Suzhou Xiangcheng Economic Development Area, Suzhou, Jiangsu 215131, China
Email: annali@taike-sz.com
Website: www.taike-sz.com/index-eng/product.asp?classid=125
Activity: Ta Processing

TAM International LP
Address: 1020-606 Spadina Cr. E, Saskatoon, SK S7K 3H1, Canada
Email: kevin.loyens@tamintl.ca
Website: tamintl.ca
Activity: NORM transportation, packaging, and handling

TANIOBIS GmbH
Address: Im Schleeke 78-91, 38642 Goslar, Germany
Email: silvana.fehling@taniobis.com
Website: www.taniobis.com
Activity: Processing

Tantec GmbH
Address: Tantalstraße 1-3, 63571 Gelnhausen, Germany
Email: g.raab@tantec-group.com
Website: www.tantec-group.com
Activity: Design and manufacture of Ta components and equipment
<table>
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<tr>
<th>Company Name</th>
<th>Address</th>
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<th>Website</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Telex Metals LLC</td>
<td>105 Phyllis Drive, Croydon, PA 19021, United States</td>
<td><a href="mailto:info@telexmetals.com">info@telexmetals.com</a></td>
<td><a href="http://www.telexmetals.com">www.telexmetals.com</a></td>
<td>Recycling</td>
</tr>
<tr>
<td>Thailand Smelting &amp; Refining Co. Ltd</td>
<td>80 Moo 8, Sakdidej Road, Tambol Vichit, Amphur Muang, Phuket 83000, Thailand</td>
<td><a href="mailto:sales@thaisarco.com">sales@thaisarco.com</a></td>
<td><a href="http://www.thaisarco.com">www.thaisarco.com</a></td>
<td>Tin Smelting, high purity refining, powders, granules, shapes and solder production</td>
</tr>
<tr>
<td>ThreeArc Mining LLC</td>
<td>Office 5, bld. 159-H, 10A, pr. Narodnogo Opolcheniya, 198216 St. Petersburg, Russia</td>
<td><a href="mailto:dbovykin@threearc.ru">dbovykin@threearc.ru</a></td>
<td><a href="http://www.threearc.ru">www.threearc.ru</a></td>
<td>Nb Mining</td>
</tr>
<tr>
<td>Traxys</td>
<td>Route d’Arlon 19-21, 8009 Strassen, Luxembourg</td>
<td><a href="mailto:imilia.boussaidi@traxys.com">imilia.boussaidi@traxys.com</a></td>
<td><a href="http://www.traxys.com">www.traxys.com</a></td>
<td>Trading</td>
</tr>
<tr>
<td>Treibacher Industrie AG</td>
<td>Division Hard Metals and Energy Storage, Auer von Welsbachstr. 1, 9330 Treibach-Althofen, Austria</td>
<td><a href="mailto:ulf.stromberger@treibacher.com">ulf.stromberger@treibacher.com</a></td>
<td><a href="http://www.treibacher.com">www.treibacher.com</a></td>
<td>Hard materials like Carbides, Nitrides, Carbonitrides and Borides</td>
</tr>
<tr>
<td>TVEL Corporation</td>
<td>49 Kashirskoe shosse, Moscow, 115409, Russia</td>
<td><a href="mailto:root@tvel.ru">root@tvel.ru</a></td>
<td><a href="http://www.tvel.ru">www.tvel.ru</a></td>
<td>Secondary Processing</td>
</tr>
<tr>
<td>Ulba Metallurgical Plant JSC</td>
<td>102 Abay Avenue, 070005 Ust-Kamenogorsk, Republic of Kazakhstan</td>
<td><a href="mailto:marketing_ta@ulba.kz">marketing_ta@ulba.kz</a></td>
<td><a href="http://www.ulba.kz/en">www.ulba.kz/en</a></td>
<td>Processing</td>
</tr>
<tr>
<td>United Spectrometer Technologies Pty LTD</td>
<td>26 Carbernet Street, Saxenburg Park 1, Blackheath, Cape Town, 7580, South Africa</td>
<td><a href="mailto:info@ustech.co.za">info@ustech.co.za</a></td>
<td><a href="http://www.us-tech.co.za">www.us-tech.co.za</a></td>
<td>Supply of equipment for analysis</td>
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</table>
For information about how you can join the T.I.C. and become a member of the world’s largest community focused on tantalum and niobium, see pages 40 and 42.

Save the dates

T.I.C.’s 63rd General Assembly will be held on October 16th to 19th 2022 in Geneva, Switzerland
Antitrust Compliance Policy

This policy was adopted by the T.I.C. at the 57th General Assembly held on October 17th 2016.

Purpose, Scope and Implementation: The T.I.C. is fully committed to ensuring that all of its activities are carried out in full compliance with all applicable antitrust legislation. Failure to comply with this Policy may result in the association and/or its members violating antitrust legislation and being subject to the imposition of substantial fines or even criminal penalties for individuals.

All T.I.C. employees, consultants and their elected representatives are under an obligation to conduct all business dealings in accordance with any applicable antitrust legislation. The T.I.C. employees, consultants and elected representatives must sign a written undertaking to the effect that they have read and understood the Policy and that they agree to adhere to that Policy in the conduct of their business activities.

Members are to ensure that any of their employees involved in T.I.C. activities and all those carrying out activities within the association on behalf of members are fully informed about the T.I.C.’s Policy. Applicant members will be asked to sign a statement to the effect that they have read and understood the T.I.C.’s Policy and that they will adhere to that Policy if admitted.

T.I.C. activities. Information concerning the Policy is available on the T.I.C.’s website. All meeting agendas will be sent in advance of the meeting, and they will contain a statement to the following effect: “This meeting will be conducted in full compliance with the T.I.C.’s Antitrust Compliance Policy”. All chairpersons will be required to remind group members of the contents of the T.I.C.’s Policy on a regular basis. Minutes of the meetings will be distributed to the participants within a reasonable time after the meetings.

Escalation of concerns. All employees, consultants and members and their representatives are required to report any possible breaches of the Policy. Generally, all actual or potential breaches should immediately be reported to T.I.C.’s legal counsel.

The contact information is as follows:

Jones Day, Att. Luc Houben,
4 Rue de la Régence, 1000 Brussels, Belgium
lhouben@jonesday.com
phone: +32 2 645 14 11
https://www.jonesday.com/brussels/.

For further information regarding the basic concepts of antitrust law, including cartel agreements, and types of anti-competitive agreements such as price-fixing, market sharing, quantity-fixing and information exchange, please visit the T.I.C. website at https://www.tanb.org/view/antitrust-compliance-policy.
TANIOBIS
We embody over 60 years of expertise processing and developing Ta- & Nb-based alloys and their compounds for high-end applications.

Electronics
Capacitors; Sputter targets for barrier layers in semiconductors

Medica & Optics
Biocompatible implants, high-voltage capacitors, high reliability ophthalmic and specialty glasses and lenses

Aviation & Energy
Superalloy additives for production of turbine parts

Additive Manufacturing
Customized powders for 3D printing applications
Applying for T.I.C. membership

Who can apply?
Any organisation involved in the tantalum and/or niobium industries may apply for membership. The T.I.C. is composed of companies from the entire niobium and tantalum supply chains, from explorers to miners, traders and processors, through to end users and suppliers of goods and services to the industry.

How much are the annual membership fees?
Annual membership fees for the year 2021/2022 are EUR 2750 for corporate members and EUR 500 for associate members, representing excellent value for money.

Corporate or associate membership?
Corporate members are commercially involved in the tantalum and/or niobium industries. They are voting members and make up the majority of the membership.

Associate membership is reserved for non-commercial organisations such as governments, civil society groups and academia. The Executive Committee has the final decision concerning which category is applicable to applicant organisations.

How to apply?
Applications for membership are considered at the annual general meeting held each September / October and should be submitted at least one month beforehand.

To apply, an organisation needs to:

- Complete the application form at https://www.tanb.org/view/join-today or from info@tanb.org.
- Provide a brief description of its activities in tantalum and/or niobium.
- Confirm that it has read and understood the T.I.C.’s current policies*.
- Corporate applicants need the support of two existing corporate members.
- The Executive Committee considers all applications and those that are accepted as valid are invoiced for six months’ membership fee. Full payment is required at least one week before the General Assembly.
- All valid applications for membership are discussed and voted on by the existing members at the annual general meeting via an anonymous vote by ballot paper. Applicants may not be present at the meeting during membership discussions and voting.
- Successful applicants are considered to be a member of the T.I.C. for the year during which they were accepted. Regardless of the voting outcome, applicants are free to attend the technical conference that follows the members’ general meeting.

If you are interested in joining the T.I.C. please contact emma.wickens@tanb.org.

* In November 2021, these are the Artisanal and Small-scale Mining Code of Conduct, Transport Policy, Data Protection Policy and Antitrust Compliance Policy. All four are available at www.TaNb.org.
We Deal In

3 Ts

Tin  Transparency
Tantalum  Traceability
Tungsten  Trustworthy

Established in 2009, ITSCI Member since 2011

miningmineralsresources.com

Democratic Republic of Congo
Benefits of T.I.C. Membership

The T.I.C. undertakes a wide range of activities in support of its members’ interests. The benefits of corporate membership include*:

**Information services for members**
- Monthly updates giving news and information about our industries.
- Quarterly niobium and tantalum statistics reports.
- The Bulletin, our printed newsletter packed with technical papers and news.
- Digital archives of tantalum and niobium technical papers, patents and statistical reports on the members’ area of www.TaNb.org.

**Technical services**
- Priority advice and support from the T.I.C. Technical Officer.
- Guidance on pertinent subjects, such as artisanal and small-scale mining, additive manufacturing, antitrust and transport.
- Liaising with governments and other stakeholder organisations on subjects relevant to our industry including:
  - Supply chain due diligence and other mineral legislation.
  - Transport of naturally occurring radioactive materials (NORM).
  - Critical raw materials.

**The General Assembly, our annual technical conference**
- Priority booking and exclusive early-bird discounts to attend the world’s leading tantalum and niobium conference.
- Exclusive networking opportunities at the annual members’ meeting.

**Benefit from T.I.C.’s promotion of niobium and tantalum**
- Exhibiting and presenting at relevant conferences.
- Commissioning research and reports about critical aspects of the global tantalum and niobium industries.
- T.I.C. is home to the Anders Gustaf Ekeberg Tantalum Prize.

**Members decide the T.I.C. policies and strategy**
- All members can take part in the T.I.C.’s governance at the AGM.
- Corporate members can nominate representatives to stand for election to the Executive Committee and/or volunteer to serve on a subteam.
- Free listing in the Annual Report and on our comprehensive website.

**Apply today and join the world’s largest community focused on tantalum and niobium!**

* For further information, including benefits of associate membership, please contact the T.I.C. 
For details of how to apply for membership please see page 40.
NINGXIA ORIENT TANTALUM INDUSTRY CO., LTD. (OTIC)

- CLEAN TANTALUM SUPPLY CHAIN
- RESPONSIBLE GLOBAL SUPPLIER

- Founded in 1965 (former Ningxia Nonferrous Metals Smeltery)
- 1052 employees
- The biggest Ta & Nb manufacturer in China
- Certified to CFSI annual audit successively since 2011
- Sourcing all non-conflict tantalum minerals in compliance with RBA requirements
- The first listed Ta & Nb processing company in China in January 2000
- The earliest TIC member in China and an Asian member of the TIC Executive Committee
- Executive member of Ta & Nb Branch of the China Nonferrous Metal Industry Association
- The Chinese National Ta & Nb Special Metal Material Engineering Technology Research Center
- Standardization leader of the tantalum and niobium industry in China

Key Product Show

OTIC specializes in producing Ta and Nb key materials for high-tech industry: powders, compounds and customer-specific fabricated parts of tantalum, niobium and their alloys such as wires, ingots, plates, foils, bars, rods, RF superconducting cavity, sputtering target blank, furnace parts and so on for various applications.

Add: No119, Yejin Road, Dawukou District, Shizuishan, Ningxia 753000, China

Export Tel: (86)-952-2098877 or 2098873
Import Tel: (86)-952-2098622 or 2098623
Website: http://www.otic.com.cn
Fax: (86)-952-2012018
E-Mail: master@otic.com.cn
Tantalum and Niobium Suppliers for the Capacitor Electronics, Sputtering Target & Super Alloy Industries Worldwide

Tantalum Products Supplied:
- Tantalum Electron Beam Ingot, Tantalum Vacuum Arc Ingot
- Tantalum Electron Beam Chips, Tantalum Powder
- Tantalum Wire, Tantalum Furnace Parts, Tantalum Strip
- Tantalum Foil, Tantalum Plates – Blanks

Niobium products supplied:
- Niobium Electron Beam Ingot, Niobium Vacuum Arc Ingot
- Niobium Electron Beam Chips, Niobium Plate, Niobium Wire
- Niobium Oxide, Niobium Strip, Niobium Foil

Industries Served:
- Consumer Electronics
- Military Electronics
- Automotive Electronics
- Vacuum Melting
- Sputtering Target
- Deep Drawing
- Medical

A&R Merchants Inc. is a leader in the supply of conflict free Tantalum & Niobium products

Visit our website to view our ethics policy
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