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
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5 President’s Letter
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Tantalum-Niobium International Study Center (T.I.C.)
Address: Chaussée de Louvain 490, 1380 Lasne, Belgium
Phone: +32 2 649 51 58
Skype: T.I.C._Director
Email: info@tanb.org
Website: www.TaNb.org
VAT no.: BE0414.408.447
Legal status: The T.I.C. is an AISBL under Belgian law.

Legal counsel: Jones Day
4 Rue de la Régence, 1000 Brussels, Belgium
https://www.jonesday.com/brussels/

Accountant: Bofidi Brussels
Tervurenlaan 32, 1040 Brussels, Belgium
http://www.bofidi.eu/

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

Cover photo credit: Shutterstock
Established in 2006, we are a leading producer of tantalum and niobium metallurgical and related products. With a sales volume of over 1000 tonnes of Tantalum and Niobium products in 2018, we have enjoyed a compound annual growth rate of over 20% in the last 3 years, accounting for over 30% market share in China. Available in Industrial and High Purity grades our products include tantalum and niobium pentoxides (Ta₂O₅ and Nb₂O₅) as well as potassium heptafluorotantalate (K₂TaF₇). To meet the diversified needs of markets, we also offer processed products such as tantalum and niobium ingots, bars, wires and other metal forms.

Guangdong Zhiyuan New Material Co., Ltd actively develops strategic partnership with upstream secure mineral resources as well as downstream companies to expand our technically advanced product offerings toward the goal to become the trusted leader of the tantalum and niobium industry globally.
Dear Fellow Members and Friends,

It is my pleasure to welcome you to the 2019 Annual Review, published to mark our 60th General Assembly in Hong Kong.

This Annual Review highlights many of the initiatives that the Tantalum-Niobium International Study Center (T.I.C.) has focused on, in our effort to improve our industries for our members. The T.I.C. seeks to take the lead on guiding much of the conversation about the important issues that may improve the business and academic environment for tantalum and niobium. We hope to achieve our goals through hosting exceptional conferences, publishing worthy Bulletins, producing the most accurate tantalum and niobium statistics, and by recognizing key individuals through industry awards.

I am happy to report that our statistics and Bulletin are the most accurate and professional that we have ever produced. Africa, as a legitimate and credible source of tantalum units to the international market, has produced the largest percentage of supply we have ever recorded. Our industry now serves as a model for other commodities on independent certification supply chain credibility. Our organization has been used increasingly by members as a source of technical information for authorities.

I appreciate all the many contributions of our staff, as well as my fellow Executive Committee members and particularly our corporate and associate members who have made this organization what it is today. Many thanks to everyone that has supported this Annual Review through their advertisements and our General Assembly sponsors: Guangdong Zhiyuan New Material Co., Ltd (platinum), A&R Merchants Inc. (silver), RC Inspection Group (silver) and Yanling Jincheng Tantalum & Niobium Co., Ltd (silver).

Sincerely yours,

John Crawley
President
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 26 countries involved with all aspects of the tantalum and niobium industry supply chain (including mining, trading, processing, recycling, metal fabrication, capacitor manufacturing, medical… see page 7).
• 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 led by the Director, who is supported by the Secretary General, the Technical Officer, and external consultants and service providers.

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 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 2019
Executive Committee

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 59th General Assembly, and consists of (in alphabetical order of member’s surname):

Fabiano Costa  
fcosta@amgmineracao.com.br

John Crawley (President)  
jcrawley@rmmc.com.hk

Silvana Fehling  
silvana.fehling@hcstarcktanb.com

David Gussack  
david@exotech.com

Jiang Bin  
jiangb_nniec@otic.com.cn

Janny Jiang  
jiujiang_jx@yahoo.com

Kokoro Katayama  
kokoro@raremetal.co.jp

Raveentiran Krishnan  
raveentiran@msmelt.com

Ben Mwangachuchu  
bmwangaceo@smb-sarl.com

Candida Owens  
owens.candida@cronimet.ch

Daniel Persico  
danielpersico@kemet.com

Alexey Tsorayev  
alexey.tsorayev@mail.ru

The Executive Committee meeting in Edinburgh, UK, April 2019
The 2019 election to the Executive Committee takes place on October 14th during the Association’s annual general meeting (AGM) at the 60th General Assembly in Hong Kong. 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. The Director sits on all subteams. In September 2019, the following subteams were operational:

Marketing:
- Daniel Persico (chair)
- Fabiano Costa
- Raveentiran Krishnan
- Emma Wickens

Supply Chain:
- John Crawley (chair)
- Raveentiran Krishnan
- Jim Maguire
- Candida Owens
- William Shannon

Meetings:
- Candida Owens (chair)
- David Gussack
- Ronald Gilerman
- Janny Jiang
- Emma Wickens

Statistics:
- Alexey Tsorayev (chair)
- John Crawley
- Silvana Fehling
- David Knudson

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.

While the Association’s main office is in Lasne, Belgium, staff also operate from the UK (Director) and the USA (Technical Officer).

Director 
Roland Chavasse  
roland.chavasse@tanb.org

Secretary General
Emma Wickens
emma.wickens@tanb.org

Technical Officer
David Knudson
david.kudson@tanb.org

The T.I.C. also works regularly with several consultants who are specialists in their field (e.g. NORM transport) in order to advance the Association’s goals.
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<td>Thaisarco</td>
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<td>Herman Becker-Fluegel</td>
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<td>2018</td>
<td>John Crawley</td>
<td>Minerals Resources International AG</td>
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</table>
Dear members and stakeholders,

The last twelve months have been an exciting time at the T.I.C.; several long-term projects have started to show results, our membership is stable, and careful planning has produced a healthier financial situation than had been budgeted.

Since our 59th General Assembly in Kigali, Rwanda, 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 Emma Wickens’s tireless work on our Hong Kong conference and David Knudson’s efforts on the enlarged statistics service.

An association is only ever as strong as its members and there are currently eighty-three commercial members and five associate members (see page 25 onwards or www.TaNb.org). At our 59th General Assembly we welcomed eight new corporate members and one associate member*:

- **Australian Strategic Materials Ltd (ASM)**, a mining company listed on the Australian Stock Exchange that is developing the Dubbo Project.
- **GGV Holding Ltd** owns diversified mining and upstream assets in tin, tungsten, tantalum operations in the Democratic Republic of Congo (DRC).
- **H.C. Starck High Performance Metal Solutions (H.C. Starck Solutions)** is a leading supplier of the technology metals, including tantalum & niobium.
- **Halcyon Inc.** has over 30 years of experience in procuring mineral ores of tin, tungsten and tantalum from the Great Lakes Region of Central Africa.
- **Jiujiang Fuxing Tai Trade Co. Ltd** purchases tantalite, columbite and cassiterite and sells Ta₂O₅ and tantalum metal as bar, ingot sheet and wire.
- **RC Inspection Metals B.V.** is an independent inspection and analysis company operating in the field of marine survey related services.
- **SAMWOOD NEO Inc.**, a company trading and recycling tantalum, niobium and related materials, both in Japan and on international markets.
- **United Spectrometer Technologies Pty Ltd**, a specialist in high-end spectrometers and analysers for fast and accurate elemental analysis.
- **Rwanda Mines, Petroleum and Gas Board (RMB)** (associate member), the body of the Government of Rwanda responsible for regulating the mining sector in Rwanda.

* Non-members interested in joining the T.I.C. can find details of the many benefits of membership on page 42 and information about how to join on page 41.
Bulletin Review

Since February 1975, the Association has published a quarterly journal containing news, information and updates on our industry and the Association's work.

This year, for the first time, we published a review of highlights from recent Bulletins in both Chinese and French in order to improve our reach and relevance to the global tantalum-niobium industry.

While the quarterly Bulletins will continue to be published in English, the positive feedback we have received so far suggests that annual Bulletin Reviews in more than one language would be a valuable addition to our output.

Statistics

The T.I.C. statistics service is one of the key benefits of membership and we are constantly investing in 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. This is augmented with international trade data and other public sources of information, to provide the fullest possible picture of the state of the market. Members’ data is held by the independent data collector, Miller Roskell Ltd, a chartered accountant. T.I.C. staff have no access to an individual member's data, only the aggregate totals and international trade data.

In August 2019, we commenced an additional service which provides timely updates on international shipments of tantalite and ferro-niobium, two key indicators of activity levels in our industry.

Supply Chain

Over the last twenty-four months, tantalum and niobium have been the subject of international trade policies on several occasions, not least concerning tariffs between the U.S. and China. In these uncertain times, we believe it is more important than ever to build a strong community of tantalum and niobium stakeholders to represent the interests of our industry.

In the European Union (EU), preparations have continued for the Conflict Minerals Regulation that will come into force on January 1st 2021. This will impact EU importers of tin, tantalum, tungsten and gold from anywhere in the world (not just DRC and neighbouring countries, as with Dodd-Frank).
We are actively engaged with competent authorities and the European Commission on this issue, both directly and through our membership of the European Partnership for Responsible Minerals (EPRM).

On a related subject, the T.I.C. continued to sit on the Governance Committee of the ITSCI Programme and we were very pleased when the OECD praised how closely ITSCI is aligned with its due diligence guidance, which bodes well for ITSCI to be recognised under the EU regulation. 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, when the UK leaves the EU. While it has often been stated that the UK wants to leave in an orderly manner, which would include wholly adopting the EU Conflict Minerals Regulation and many other regulations, at the time of writing there remains considerable uncertainty regarding this matter.

**Transport of NORM**

This year the T.I.C. published extended guidance on measuring and transporting tantalite-columbite minerals that contain naturally occurring radioactive materials (NORM), to complement our shorter guidance published in 2016-18 (the latter is available in eight languages).

This 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).

The T.I.C. has observer status at IAEA's Transport Safety Standards Committee (TRANSSC) and is a member of both the EAN-NORM group and the Transport Facilitation Working Group (TFWG) to keep us fully informed of developments in this field.

**Looking ahead**

The Executive Committee, subteams and staff are constantly working to promote tantalum and niobium, further develop T.I.C.’s value proposition and invest in the future of the Association. Improvements are funded from the surpluses that were recorded each financial year for over a decade and, while this will result in a net financial deficit in the short term, the total members’ funds will not fall below two years’ worth of core operating costs. The Executive Committee is confident that member companies will appreciate the improvements.

If your business is tantalum or niobium and you’re not yet a member you should consider joining; and if you are already a member then I look forward to hearing your advice on what the T.I.C. can do for you. After all, this is your industry and together we are stronger.

Roland Chavasse, Director
London, UK, September 2019
The Bulletin
Quarterly journal of the T.I.C.

Our mission is to provide the global tantalum and niobium community with news, information and updates on our industry and the Association’s work. We hope you enjoy reading it and you will want to continue receiving it in the future.

Sign up today and don’t miss an issue!
In 2018 the T.I.C. established an annual science award to recognise excellence in published tantalum research, 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 from 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. Two publications described improved titanium-tantalum alloys for additive manufacturing, while the others covered recycling waste capacitors, solid state memory devices, tantalum-nitride electrodes, tantalum yttrium oxide thin films and a process for selective laser melting (SLM) of pure tantalum. 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 2019 the T.I.C. was privileged to have on the panel (alphabetical by surname):

- Richard Burt, Kielsinn Inc., Canada (Chair)
- Professor Elizabeth Dickey, North Carolina State University, United States
- Magnus Ericsson, Luleå University of Technology, Sweden
- Dr Axel Hoppe, Commerce Resources / consultant, Canada / Germany
- 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 2019 winning publication

After considerable deliberation, the winner of the Ekeberg Prize 2019 was voted to be Nicolas Soro and his co-authors for the paper ‘Evaluation of the mechanical compatibility of additively manufactured porous Ti–25Ta alloy for load-bearing implant applications’.

Nicolas Soro is studying for his PhD in 'Additive Manufacturing of Porous Metals for Biomedical Applications' within the group of Professor Matthew Dargusch at the Centre for Advanced Materials Processing and Manufacturing of The University of Queensland, Australia.

When announcing the winner, the independent judging panel stated that in choosing this paper, they took into consideration that the “advancement of knowledge and understanding of tantalum” should not be restricted to the scientific and research community but also benefit the general public. In their view, the application of tantalum containing load-bearing implants, that can significantly improve the quality of life of recipients, and so this publication, was considered to have the greatest potential of all the submissions to enhance the reputation and recognition of the tantalum industry to the public.

The full list of authors of the winning paper is Nicolas Soro, Hooyar Attar, Martin Veidt and Matthew Dargusch from the Centre for Advanced Materials Processing and Manufacturing (AMPAM) at The University of Queensland, Australia, and Erin Brodie and Andrey Molotnikov from the Department of Materials Science & Engineering at Monash University, Australia.

The panel of experts praised the very high standard of all shortlisted works, describing them as “challenging the boundaries of current knowledge of tantalum, and which may well lead to significant breakthroughs into exciting new applications of the element”.

To be eligible for the 2020 Ekeberg Prize a publication must be about tantalum, be published in English, and be dated from October 1st 2018 to April 30th 2020.
ICD

Specialists in the sourcing, processing, preparation, and supply of primary and secondary metals and alloys for the Vacuum and Air melting industries

Buying and Supplying the following:
Cobalt, Nickel, Tungsten, Tantalum, Niobium, Molybdenum, Chromium, Vanadium, Hafnium, Zirconium, Titanium, HSS, Wolframite Ore, Tantalite Ore

Primary Markets Served:
- Aerospace
- Oil and Gas
- Medical
- Industrial Gas Turbine
- Foundries
- Steel Mills
- Nuclear
- Powder Metallurgy
- Tooling
- Mining
- Petrochemical
- Toll Processing

ICD ALLOYS AND METALS, LLC
A Division of the ICD Group, International
3946 Westpoint Boulevard
Winston Salem, NC 27103
Tel: +1-336-793-2222
Email: icd@icdalloys.com

ICD EUROPE, LTD
A Division of ICD Alloys and Metals, LLC
Units 7-11, Vantage Park, Coborn Avenue, Sheffield, S9 1DA, UK
Tel: +44(0)1709 918 120
Email: admin@icdalloys.com
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<td>Brussels, Belgium</td>
</tr>
<tr>
<td>15th</td>
<td>May 1981</td>
<td>Goslar / Bad Harzburg, West Germany</td>
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<td>16th</td>
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<td>17th</td>
<td>June 1982</td>
<td>Tulsa, OK, United States</td>
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<td>18th</td>
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<td>Brussels, Belgium</td>
</tr>
</tbody>
</table>

**The MMTA’s International Minor Metals Conference 2020**

Organised by Metal Events Ltd

**22-24th April, 2020**

*At the Francis Marion Hotel, Charleston, USA*

*Golf Day at the Wild Dunes Golf Club 21st April*

Over 300 delegates joined us in Edinburgh this year for the premier minor metals conference in the industry calendar.

The current fee for MMTA members is £750 and for non-members the rate is £995 valid for registrations received by November 20th 2019.
<table>
<thead>
<tr>
<th>Year</th>
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<td>19th</td>
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<td>58th</td>
<td>7th October 2017</td>
<td>Vancouver, BC, Canada</td>
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<td>59th</td>
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<td>Kigali, Rwanda</td>
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<tr>
<td>60th</td>
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<td>Hong Kong SAR, China</td>
</tr>
</tbody>
</table>

**Save the date:** T.I.C.’s 61st General Assembly will be on October 11th to 14th 2020
A METAL SPECIALIST IN THE PRODUCTION OF TANTALUM AND NIOBIUM METAL
THE BIGGEST RMI-RMAP CONFORMANT PYROMETALLURGICAL TA & NB SMELTER IN CHINA

O ADVANCED TECHNOLOGY
O OUTSTANDING QUALITY
O OUR ADVANTAGE
O LARGE CAPACITY
O COMPETITIVE PRICE

Products supplied

Tantalum Electron Beam ingot
(Purity: 99.9%–99.95%, 99.99% min)

Niobium Electron Bean ingot
(Purity: 99.95%–99.99%)

Niobium sintered bar
(Purity: 99.5%–99.9%)

ABOUT US  >>>

With the current capacity 300MT tantalum ingots, 700MT niobium bars and 400MT niobium ingots, Yanling Jincheng Tantalum & Niobium Co., Ltd. ("Yanling Jincheng" for short hereafter) is a well-known company engaged in producing and processing tantalum and niobium material all over the world.

In order to realize technological innovation and development, Yanling Jincheng has invested over USD 1.5 million in improving traditional technology and upgrading product quality for over 2 years. Eventually a new technology that needs only “single carbonization, single reduction” to produce qualified niobium bars was invented successfully. As one of the most advanced productive technologies, it helps to halve the production cost and double the previous yield, which makes the price of Yanling Jincheng’s niobium bars the lowest in China ever since.

Yanling Jincheng has been certified to be in compliance with the standard GB/T 19001-2016 / ISO9001: 2015. The company is the member of both TIC and MMTA. Thanks to their reliable quality and good reputation, Yanling Jincheng has grown into one of the most globally competitive Ta & Nb smelters, aiming at becoming China’s largest supply base for tantalum and niobium metal.

Yanling Jincheng Tantalum & Niobium Co., Ltd.

◉ Chuangye Road, SME Pioneer Park,
  Yanling, Zhuzhou, Hunan, China
◉ sales@jinchengtn.com
  ireneguan@jinchengtn.com
◉ +8615869711928
◉ www.jinchengtn.com
Biographies are of the lead author of presentations (alphabetical by surname, not in running order).

**Hillary Amster, Responsible Minerals Initiative (RMI)**

*Evolving expectations for due diligence by Hillary Amster and Leah Butler*

Hillary Amster is the Director of Audit Operations at the Responsible Business Alliance (RBA), where she oversees the implementation and quality management of RBA’s social and supply chain audit programs. Prior to this role, Hillary managed the Responsible Minerals Assurance Process (RMAP) on behalf of the RMI’s 360+ member companies. Previously, she consulted Fortune 500 companies, advising them on the development and implementation of corporate social responsibility strategies. She holds a law degree with a certificate in international human rights from the University of San Francisco School of Law, and a Bachelors in Philosophy and Italian Studies from Tufts University.

**Lily Asia, IBM Corporation**

*Optimizing supply chain transparency for greater goods by Lily Asia*

Lily Asia is Global Supply Chain Lead, Responsible Minerals at IBM Corporation and is recognized as a subject matter expert for supply chain transparency and responsible minerals sourcing. Prior to joining IBM, she held similar positions at Hewlett-Packard and Apple. She has a successful track record of collaborating with suppliers to attain a conflict-free supply chain. She is highly skilled at identifying and understanding the complex interlocking supply chain relationships present in the electronics sector. Lily holds dual Bachelor of Science degrees in Marketing and International Business from San Francisco State University. She is an IBM certified professional for Project Management, Agile Practices, Blockchain, and Global Procurement.

**James Chen, KEMET Electronics Corporation**

*High temperature tantalum polymer capacitors by Antony P. Chacko, James Chen, Chris Stolarski, Cristina Mota Caetano, and Philip Lessner*

James Chen obtained his Ph.D. in physical chemistry from University of South Carolina after completing his MS and BS studies in China. He joined KEMET Electronics Corporation in 2002 and has worked in the areas of material development and characterization as well as new product development of tantalum polymer capacitors. He is currently Vice President of Tantalum Technology at KEMET.

**Sophie Damm, German Mineral Resources Agency (DERA / BGR)**

*Tantalum: a market overview by Sophie Damm*

Sophie is a senior geologist with DERA, the German Mineral Resources Agency within the Federal Institute for Geosciences and Natural Resources (BGR) where she is part of the mineral economics team. DERA’s focus is the secure and sustainable supply of potentially critical mineral raw materials for the German industry, a government authority that advises both companies and political stakeholders on developments and potential supply risks on the global commodity markets. She holds an MSc in geology and prior to joining DERA in 2017, Sophie spent eight years working as an exploration and mine geologist on a number of copper, gold and lead-zinc projects in Australia. At DERA her particular interests are the global tantalum and graphite industries.
Mickaël Daudin, Pact
The ITSCI Programme by Mickaël Daudin (Pact) & Samantha Munro (ITA)

Mickaël Daudin joined Pact in 2015 and currently is Program Manager for the ITSCI project in the Great Lakes Region. Mickaël also leads Pact’s engagement with the Voluntary Principles Initiative on Security and Human Rights, of which Pact is a founding member. Prior to Pact, Mickaël worked as an advocate to the German government for Médecins Sans Frontières (MSF) on campaigns focused on promoting access to essential medicines and raising funds for MSF. 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. A native of France, he speaks fluent French, English, German, and Spanish, and is currently learning Mandarin.

David Knudson, Tantalum-Niobium International Study Center (T.I.C.)
T.I.C. 2019 annual statistics presentation with augmented trade statistics, by David Knudson

David Knudson is the T.I.C.’s Technical Officer. He is a chemical engineer who has been in the tantalum industry for over 36 years. David started his career at Cabot Corporation’s Boyertown plant in Pennsylvania, USA, as a research and development technician working on tantalum powder development projects. Subsequently he was promoted to Manufacturing Engineer responsible for flaked powders and dry processing of all powders. In 2003 David joined Niotan Inc. in Nevada, USA, rising to become Vice President of Engineering. After KEMET bought Niotan in 2011 and renamed it KEMET Blue Powder he became Engineering Manager. David has been with the T.I.C. since July 2016.

Lin Xiao, Institute of Process Engineering, Chinese Academy of Sciences
Upgrading resource efficiency on the whole life cycle from green manufacturing to recycling by Lin Xiao, Liu Chenmin, Wang Shuhao, Wang Xue, Sun Zhi and Dai Yang

Lin Xiao, Ph,D, is an associate professor at the Institute of Process Engineering, Chinese Academy of Sciences. His research interests include developing novel separation and purification technologies for hydrometallurgy and waste utilization, including processes for mineral ores and residue containing nonferrous metals, and the treatment of industrial wastewater containing heavy metals, ammonia, high concentration of salts. He has worked on over thirty projects in the fields of Co, Li, Ni, Ta, Nb, V, REEs, Mo, W and precious metals. Granted prizes like national technology invention (China) and national Key Practical Technologies of Environmental Protection, he has authored over fifty Chinese patents and was a lead author for the “Blue book of power battery” (China).

Lu Dong, Ningxia Orient Tantalum Industry Co., Ltd
Development and prospect of tantalum and niobium hydrometallurgical technology and equipment by Lu Dong, Zhang Wei-ning, and Zheng Pei-shen (presented by Jiang Bin)

Lu Dong, Senior industry engineer, technological expert of OTIC, received his B.Eng. Degree in electrical engineering from Central South University, Changsha, Hunan, China. Since 2003, he has been working as engineer in tantalum and niobium hydrometallurgy technology research and development at Ningxia Orient Tantalum Industry Co., Ltd, Shizuishan, Ningxia, China. His current research interests include short process flow and harmless technologies of tantalum and niobium hydrometallurgy and new metallic products development. In the past 10 years, he has developed many products, for example, tantalum(V) ethoxide, tantalum pentachloride and porous tantalum for implants.
Erik Sardain and Suzanne Shaw, Roskill Information Services

Tantalum and niobium – what will the next decade bring? by Suzanne Shaw and Erik Sardain

Erik holds MA degrees in Economics and Political Sciences from the University of Geneva. He joined Roskill as an Associate Consultant in 2018, focussing on iron ore, steel, vanadium and niobium. He was previously Market Analysis Manager with BHP in Singapore. Suzanne graduated with an MSc in Geoscience from Royal Holloway, University of London in 2006 and joined Roskill in 2007. She specialises in analysis of natural & synthetic graphite, rare earths and tantalum and is the author of numerous Roskill reports on these industries. She became Deputy Manager of the Industrial Minerals & Chemicals Division of Roskill in 2018.

Olivier Sarrat, NobelClad, and Olivier Lallement, Tantec

Overview of fabrication of tantalum explosion clad equipment by Olivier Sarrat (NobelClad) and Olivier Lallement (Tantec) (presented by Olivier Sarrat)

Olivier Sarrat is the Business Development Manager at NobelClad, the global leader in dissimilar metal cladding services. Mr Sarrat has a master's degree in Mechanical Engineering and is currently working towards a master's degree in Strategy and Management of International Business. He has 23 years of experience at NobelClad and has extensive knowledge of explosion bonding manufacture and control. Olivier Lallement is Head of Sales at Tantec GmbH, the only company worldwide that entirely focuses on the material tantalum, producing and supplying heat exchangers, pressure vessels and equipment out of tantalum for the chemical and pharmaceutical industry. Mr Lallement has worked for more than 15 years in the reactive metals business for the chemical process industry and continues to promote tantalum equipment to customers worldwide.

Nicolas Soro, The University of Queensland

3D-printed tantalum-based alloys for biomedical applications by Nicolas Soro, Hooyar Attar, Erin Brodie, Martin Veidt, Andrey Molotnikov and Matthew Dargusch

Nicolas Soro is a PhD student at The University of Queensland (Australia). For the past 3 years, he has been working on the additive manufacturing of porous metals for biomedical applications with a focus on the relationships between their morphological characteristics and their mechanical properties. He has more recently incorporated to his work the use of tantalum as an alternative non-toxic alloying element to the industry standard titanium alloys. He and his colleagues were awarded the 2019 Anders Gustaf Ekeberg Tantalum Prize in recognition of their outstanding contribution to the advancement of the knowledge and understanding of tantalum in their field.

Tang Huiping, Xi’an Sailong Metal Materials Co., Ltd (Northwest Institute for Non-ferrous Metal Research)

3D-printed tantalum-based alloys for biomedical applications by Tang Huiping and Wang Hui (presented by Wang Hui)

Professor Tang Huiping is Deputy Chief Engineer of the Northwest Institute for Non-ferrous Metal Research, Director of State Key Laboratory of Porous Metal Materials, and Chairperson of Xi’an Sailong Metal Materials Co., Ltd. She has led more than 20 projects including the National Natural Science Foundation of China, the National Basic Research Program of China (973 programs) and the National High Technology Research and Development Program for Advanced Materials of China. She has won the second prize of National Technological Invention Award and National Science and Technology Progress Award and 6 first prizes of provincial and ministerial science and technology awards.

Continued
She has also been granted 73 invention patents, developed and revised 16 national and industrial standards, published more than 200 SCI papers and co-authored 5 monographs. She has led teams to carry out a number of innovative projects in porous metal materials and powder bed electron beam 3D printing technology and equipment. The products served hundreds of enterprises and achieved significant economic and social benefits.

Willis Thomas, CRU

*Trading places: niobium and vanadium in steel applications by Willis Thomas and Aleksander Popovic (presented by Ashley Wang)*

Growing up on a dairy farm in the United States, Willis has always been drawn to land and the resources below it. Before joining CRU in early 2017, he spent 5 years as the Inside Sales and Production Manager at Kapp Alloy & Wire, Inc., a US-based manufacturer of solder and other non-ferrous wires where he focused on daily metal pricing for raw and finished products, metals purchasing, and the management of production operations. Since joining CRU Willis has worked on a number of projects requiring primary research, and more recently has been more focused on ferroalloy markets – in particular the vanadium market which he covers regularly as editor of CRU’s Vanadium Market and Costs Outlook product. Willis holds a Masters in Finance from Colorado State University-Global and a BA in Political Science from Washington & Jefferson College.

Marten Westrup, European Commission

*The EU’s approach to responsible mineral supply chains by Marten Westrup*

Marten Westrup is Team Leader for energy and raw materials in the Directorate General for Trade of the European Commission. In this capacity, he oversees the Commission’s work on responsible sourcing of minerals, including the implementation of the EU’s so-called Conflict Minerals Regulation, which will start to apply to EU importers of tin, tantalum, tungsten and gold as of 1 January 2021. He has previously worked with EU policy development in the energy, aerospace and automotive sectors in other departments of the European Commission. Before first joining the European Commission in 2007, he was a Manager at the Swedish Trade Council in Brussels. He holds dual masters degrees in economics and law from Stockholm School of Economics and Stockholm University.

Tomáš Zedníček, European Passive Components Institute (EPCI)

*Trends and new challenges: how future technologies may impact tantalum- and niobium-based capacitors by Tomáš Zedníček*

Tomáš Zedníček Ph.D. is President of the European Passive Components Institute (EPCI). Dr Zedníček’s doctorate examined tantalum capacitors and was awarded in 2000 from the Technical University of Brno in the Czech Republic. Prior to establishing EPCI in 2014, he worked for over 21 years at a major tantalum capacitor manufacturer, including 15 years as the worldwide technical marketing manager. He has authored over 60 technical papers and a US/international patent on tantalum and niobium capacitors. He regularly presented at the CARTS passive component conference and other leading events. Dr Zedníček has contributed several articles for the Bulletin and sits on the judging panel for the Anders Gustaf Ekeberg Tantalum Prize.

If you are interested in making a presentation at the T.I.C.’s 61st General Assembly in October 2020 please contact info@tanb.org by March 31st 2020
A&M Minerals and Metals Ltd
Address: Apex Yard, 29-35 Long Lane, London SE1 4PL, United Kingdom
Email: info@amgroup.uk.com
Website: www.amgroup.uk.com
Activity: Trading

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 NV (AMG)
Address: Building 200, 435 Devon Park Drive, Wayne, PA 19087, United States
Email: fcosta@amgmineracao.com.br
Website: www.amg-nv.com
Activity: Mining, Processing

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

Alita Resources Ltd
Address: P.O. Box 2275, Churchlands, WA6018, Australia
Email: claire.obrien@altiresources.com.au
Website: www.allianceminerals.com.au
Activity: Mining

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

AS International Corporation Ltd
Address: Unit 2b, Olympic Way, Sefton Business Park, Aintree, Liverpool L30 1RD, United Kingdom
Email: secretary@alexstewartinternational.com
Website: www.alexstewartinternational.com
Activity: Assaying, Inspection and Sampling Services
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<td><strong>ATI Specialty Alloys &amp; Components</strong></td>
<td>P.O. Box 460, Albany, Oregon 97321, United States</td>
<td><a href="mailto:benjamin.mckenzie@atimetals.com">benjamin.mckenzie@atimetals.com</a></td>
<td><a href="http://www.atimetals.com">www.atimetals.com</a></td>
<td>Superalloys</td>
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<tr>
<td><strong>Australian Strategic Materials Ltd</strong></td>
<td>Ground Floor, 89 Burswood Road, Burswood, WA 6100, Australia</td>
<td><a href="mailto:amacdonald@alkane.com.au">amacdonald@alkane.com.au</a></td>
<td><a href="http://www.alkane.com.au">www.alkane.com.au</a></td>
<td>Nb Mining, Processing</td>
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<td><strong>Avon Specialty Metals Ltd</strong></td>
<td>Empire Way, Gloucester, GL2 5HY, United Kingdom</td>
<td><a href="mailto:steven.munnoch@avonspecialtymetals.com">steven.munnoch@avonspecialtymetals.com</a></td>
<td><a href="http://www.avonspecialtymetals.com">www.avonspecialtymetals.com</a></td>
<td>Recycling</td>
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<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>
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<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@cbm.m.com.br">yuri.miranda@cbm.m.com.br</a></td>
<td><a href="http://www.cbmm.com.br">www.cbmm.com.br</a></td>
<td>Nb Mining, Processing</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>
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<tr>
<td><strong>Chemaf sarl</strong></td>
<td>144 Avenue Usoke, 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>
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<td><strong>CNMC Ningxia Orient Group Co., Ltd</strong></td>
<td>119 Yejin Road, Dawukou District, Shizuishan City, Ningxia 753000, China</td>
<td><a href="mailto:jiangb_nniec@otic.com.cn">jiangb_nniec@otic.com.cn</a></td>
<td><a href="http://www.otric.com.cn">www.otric.com.cn</a></td>
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Cronimet Central Africa AG
Address: Allmendstrasse 11, 6312 Steinhausen, Switzerland
Email: owens.candida@cronimet.ch
Website: www.cronimet.com
Activity: Trading, Processing

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 and 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: gerentegeral@ecowhite.com.br; trader1@ecowhite.com.br
Website: www.ecowhite.com.br
Activity: Mining, Processing, Recycling

ELG Utica Alloys Ltd
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Email: craig.wilkes@elguticaalloys.com
Website: www.elguticaalloys.com
Activity: Alloys, Processing, Recycling

Ethiopian Mineral, Petroleum and Biofuel Corporation
Address: P.O. Box 2543, Addis Ababa, Ethiopia
Email: empbf.corporation@gmail.com
Website: www.empbfcorporation.com
Activity: Ta Mining

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.chinatanb.com
Activity: Processing
H.C. Starck Tantalum and Niobium GmbH

Over 50 years of expertise and highest competency in processing and development of Ta- & Nb-based materials for high-end applications

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www.hcstarck-tantalum-niobium.com
info-ta-nb@hcstarck.com

Member of JX Nippon Mining & Metals Group
GGV Holding
Address: Christaki Cranou 1, Germasogeia, 4047 Limassol, Cyprus
Email: tang396919@hotmail.com
Website: www.en.chinatanb.com
Activity: Processing

Guangdong Rising Rare Metals-EO Materials Ltd
Address: Shen’gang, Taiping Town, Conghua District, Guangzhou, 510980, China
Email: ctns723@163.com
Website: www.ctns723.com
Activity: Processing

Guangdong Zhiyuan New Material Co. Ltd
Address: Qiaotou Town, Yingde City, Guangdong Province, 513055, China
Email: betty@zhiyuanm.com
Website: www.zhiyuanm.com
Activity: Processing

H.C. Starck High Performance Metal Solutions (H.C. Starck Solutions)
Address: 45 Industrial Place, Newton, MA 02461, United States
Email: joseph.sheehan@hcstarcksolutions.com; alex.bruno@hcstarcksolutions.com
Website: www.hcstarcksolutions.com
Activity: Secondary Processing

H.C. Starck Tantalum & Niobium GmbH
Address: Im Schleeke 78-91, 38642 Goslar, Germany
Email: silvana.fehling@hcstarck.com
Website: www.hcstarck-tantalum-niobium.com
Activity: 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

Heraeus Deutschland GmbH & Co. KG
Address: Postfach 1553, 63405 Hanau, Germany
Email: sergej.schander@heraeus.com
Website: www.heraeus.com
Activity: Secondary Processing

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: Mining, Production Ta & Sn concentrate

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

Jiujiang Fuxing Tai Trade Co. Ltd
Address: Room 1002, building A, North Area, Lu Feng Xiao Qu, Jiujiang, Jiangxi 332000, China
Email: jiujiangfuxingtai@163.com
Website: n/a
Activity: Trading

Jiujiang Jinxin Non-ferrous Metals Co. Ltd
Address: No.3 Industrial Zone, Xunyang District, Jiujiang City, Jiangxi Province, China
Email: jiujiang_jx@yahoo.com
Website: www.jiujiangjx.com
Activity: Processing

Jiujiang Tanbre Co., Ltd
Address: No.62 Jiuhu Road, Jiujiang City, Jiangxi Province, 332014, China
Email: import@jjtanbre.com.cn
Website: www.jjtanbre.com.cn/english
Activity: Processing

Jiujiang Zhongao Tantalum & Niobium Co. Ltd
Address: 801 East Binjiang Road, Jiujiang City, Jiangxi Province, China
Email: chejiahe2011@vip.163.com
Website: www.zatanb.com
Activity: Processing

KEMET Electronics Corp.
Address: KEMET Tower, 1 East Broward Blvd., 2nd Floor, Fort Lauderdale, FL 33301, United States
Email: questions@kemet.com
Website: www.kemet.com
Activity: Capacitor Manufacture, Processing

Krome Commodities Ltd
Address: 23 Ashburton Avenue, Ilford, Essex IG3 9ET, United Kingdom
Email: psmony48@gmail.com
Website: www.krome Commodities.com
Activity: Trading
Kuala Ketil Metal Sdn Bhd  
Address: 168 Lorong Bunga Raya 3/1A, Taman Cemara, 08000 Sungai Petani, Kedah, Malaysia  
Email: buanseng@gmail.com  
Website: n/a  
Activity: Trading

Malaysia Smelting Corporation  
Address: 27 Jalan Pantai, 12000 Butterworth, Malaysia  
Email: msc@msmelt.com  
Website: www.msmelt.com  
Activity: Tin smelting

MERSEN Deutschland Linsengericht GmbH  
Address: Lagerhausstrasse 7-9, 63589 Linsengericht, Germany  
Email: stephane.trefalt@mersen.com  
Website: www.mersen.com  
Activity: Design and manufacture of Ta components and equipment

Metal Do Co. Ltd  
Address: ONTEX Namba Bld. 11F, 2-2-45, Minatomachi, Naniwa-ku, Osaka 556-0017, Japan  
Email: metaldo@raremetal.co.jp  
Website: www.raremetal.co.jp/en  
Activity: Trading

Metalink International Co. Ltd  
Address: Metalink Building, 8 East Jinxin Road, Jiangjun Avenue, Jiangning Economic Development Area, Nanjing, 211153, China  
Email: mabuyang@metalink.com.cn  
Website: www.metalink.com.cn/en  
Activity: Processing, Recycling, Trading

Metallurgical Products India Pvt. Ltd  
Address: T-27, MIDC Industrial Area – Taloja, District Raigad, Maharashtra 410208, India  
Email: vkumar@mpil.co.in  
Website: www.mpil.co.in  
Activity: Processing

Metherma KG  
Address: Arnheimerstrasse 109, 40489 Düsseldorf, Germany  
Email: molybdenum@metherma.de  
Website: www.metherma.de  
Activity: Trading, Recycling

Minerals Resources International AG  
Address: Zugerstrasse 74, 6340 Baar, ZG, Switzerland  
Email: sales@mrinternational.ch  
Website: www.mrinternational.ch/  
Activity: Mining
For more than 30 years, Alex Stewart International Corporation (ASIC) has provided inspection and analytical services for base, minor and precious metals, including jewellery, ores and concentrates, ferro alloys, recycled scrap metal and also agricultural commodities.

Today, the network of regional Alex Stewart companies spans over 40 countries and delivers fast, flexible and comprehensive inspection, analytical and laboratory services to the metals and minerals industry, with coverage at all major ports and refineries. By maintaining a dedicated, friendly and trustworthy business relationship with clients, ASIC provides unparalleled technical support.

Our mission is to provide professional inspection and analytical services that conform to internationally accepted standards—and, by meeting all contractual specifications, to protect clients from unnecessary financial claims. Our inspectors are conversant with all accepted sampling and weighing procedures.

A Name to Trust in Business
Inspection and analytical services combining a unique competence—ASIC employs qualified, experienced chemists and inspectors to deliver precise and prompt quantity and quality reports and certificates. Our professional and knowledgeable team provides a dedicated, high-quality service that meets the specified requirements and demands of the metal industry, mining companies, traders, the agriculture sector, governments, banks and financial institutions and the general public.

Alex Stewart International Corporation bases its activities on the principles of responsibility, impartiality, professionalism and confidentiality.

Main Activities
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- Laboratory and Analytical Services
- Weighing, sampling and sample preparation & Quality reports
- Certification
- Technical consultancy services
- Training

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- Proof on arrival inspection
- Vessel condition surveys
- Supervision of bulk cargoes —load/discharge
- Weighing, sampling and sample preparation
- Stockpile sampling
- CMA, goods release and warehouse control
- Radioactivity testing

Laboratory Services
- Commercial analysis
- Production analysis
- Geochemical analysis
- Sample preparation
- Traditional wet chemistry
- Fire assay/AA
- ICP-MS/OES
- XRF

ASIC Operations
Argentina
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Bolivia
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Germany
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Romania
Russia
Rwanda
Singapore
Spain
Taiwan
Thailand
Turkey
United Kingdom
Ukraine
United Arab Emirates
United States
Zambia

Your Global Network of Inspection & Analytical Laboratory Services
<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Email</th>
<th>Website</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<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>Independent Consultant</td>
</tr>
<tr>
<td>Mining Mineral 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>1st Floor, 33 Queen Street, London, EC4R 1BR, United Kingdom</td>
<td><a href="mailto:eva@mmta.co.uk">eva@mmta.co.uk</a></td>
<td><a href="http://www.mmta.co.uk">www.mmta.co.uk</a></td>
<td>Associate - Trade Association</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.co.jp/en">www.mitsui-kinzoku.co.jp/en</a></td>
<td>Processing</td>
</tr>
<tr>
<td>MTU Aero Engines AG</td>
<td>Dachauer Strasse 665, 80995 München, Germany</td>
<td><a href="mailto:stefanie.winter@mtu.de">stefanie.winter@mtu.de</a></td>
<td><a href="http://www.mtu.de/en">www.mtu.de/en</a></td>
<td>Aerospace Alloys, User</td>
</tr>
<tr>
<td>Neometals Ltd</td>
<td>Level 3, 1292 Hay St, West Perth WA 6005, Australia</td>
<td><a href="mailto:mtamlin@neometals.com.au">mtamlin@neometals.com.au</a></td>
<td><a href="http://www.neometals.com.au">www.neometals.com.au</a></td>
<td>Mining</td>
</tr>
<tr>
<td>Niobras Mineração Ltda</td>
<td>RODOVIA GO 503, KM 11,5 - S/N, Fazenda Chapadão (Zona Rural), Ouvidor / GO, CEP 75715-000, Brazil</td>
<td><a href="mailto:deliott@cmocinternational.com">deliott@cmocinternational.com</a></td>
<td><a href="http://www.cmocbrasil.com">www.cmocbrasil.com</a></td>
<td>Nb Mining, Processing</td>
</tr>
<tr>
<td>NPM Silmet OÜ</td>
<td>Keskstr 2, 40231 Sillamäe, Estonia</td>
<td><a href="mailto:t.vau@neomaterials.com">t.vau@neomaterials.com</a></td>
<td><a href="http://www.neomaterials.com">www.neomaterials.com</a></td>
<td>Processing</td>
</tr>
<tr>
<td>Organization</td>
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<td>Email</td>
<td>Website</td>
<td>Activity</td>
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<tr>
<td>Pilbara Minerals Limited</td>
<td>Level 2, 88 Colin Street, West Perth, Australia</td>
<td><a href="mailto:agray@pilbaraminerals.com.au">agray@pilbaraminerals.com.au</a></td>
<td><a href="http://www.pilbaraminerals.com.au">www.pilbaraminerals.com.au</a></td>
<td>Ta Mining</td>
</tr>
<tr>
<td>Plansee SE</td>
<td>Metallwerk-Plansee-Str. 71, 6600 Reutte, Austria</td>
<td><a href="mailto:eduard.kotz@plansee.com">eduard.kotz@plansee.com</a></td>
<td><a href="http://www.plansee.com">www.plansee.com</a></td>
<td>Secondary Processing</td>
</tr>
<tr>
<td>RC Inspection Metals B.V.</td>
<td>Gustoweg 66, 3029 AS Rotterdam, Netherlands</td>
<td><a href="mailto:info@rc-inspection.com">info@rc-inspection.com</a></td>
<td><a href="http://www.rc-inspection.com">www.rc-inspection.com</a></td>
<td>Inspection, Sampling, Maritime services and analytical services</td>
</tr>
<tr>
<td>Refractory Metals Mining Co. Ltd</td>
<td>1008A Shing Chuen Industrial Building, 25 Shing Wan Road, Tai Wai, Shatin, Hong Kong, China</td>
<td><a href="mailto:info@rmmmc.com.hk">info@rmmmc.com.hk</a></td>
<td>n/a</td>
<td>Mining, Trading</td>
</tr>
<tr>
<td>Resind Indústria e Comércio Ltd</td>
<td>Rodovia 265 Km 264, Distrito Industrial, Caixa Postal 157, São João del Rei, MG 36315-000, Brazil</td>
<td><a href="mailto:almirclemente@resind.com.br">almirclemente@resind.com.br</a></td>
<td><a href="http://www.resind.com.br">www.resind.com.br</a></td>
<td>Secondary Processing</td>
</tr>
<tr>
<td>Responsible Minerals Initiative (RMI)</td>
<td>1737 King St, Suite 330, Alexandria, VA 22314, United States</td>
<td><a href="mailto:hamster@ResponsibleBusiness.org">hamster@ResponsibleBusiness.org</a></td>
<td><a href="http://www.responsiblemineralsinitiative.org">www.responsiblemineralsinitiative.org</a></td>
<td>Associate Member, Trade Association</td>
</tr>
<tr>
<td>Roskill Information Services Ltd</td>
<td>54 Russell Road, London SW19 1QL, United Kingdom</td>
<td><a href="mailto:jessica@roskill.com">jessica@roskill.com</a></td>
<td><a href="http://www.roskill.com">www.roskill.com</a></td>
<td>Research and Consultancy</td>
</tr>
<tr>
<td>Rwanda Mines, Petroleum and Gas Board (RMB)</td>
<td>KN 4 Ave, Kigali, Rwanda</td>
<td><a href="mailto:fgatari@gov.rw">fgatari@gov.rw</a></td>
<td><a href="http://www.rmb.gov.rw">www.rmb.gov.rw</a></td>
<td>Associate Member, Trade association</td>
</tr>
<tr>
<td>Company Name</td>
<td>Address</td>
<td>Email</td>
<td>Website</td>
<td>Activity</td>
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<tr>
<td>Rwanda Mining Association (RMA)</td>
<td>P.O. Box 1856, Kigali, Rwanda</td>
<td><a href="mailto:jeanmalic@yahoo.fr">jeanmalic@yahoo.fr</a></td>
<td><a href="http://www.rma.co.rw">www.rma.co.rw</a></td>
<td>Associate Member, Trade association</td>
</tr>
<tr>
<td>SAMWOOD NEO Inc.</td>
<td>3F, No.3 Hayakawa Bldg., 2-2, Kandatacho, Chiyoda-ku, Tokyo, Japan</td>
<td><a href="mailto:satomi@sw-neo.com">satomi@sw-neo.com</a></td>
<td>n/a</td>
<td>Recycling, Trading</td>
</tr>
<tr>
<td>Shalina Resources Limited</td>
<td>30th Floor, Almas Tower, Jumeirah Lake Towers, P.O. Box 340575, Dubai, United Arab Emirates</td>
<td><a href="mailto:uday.shetty@shalina.com">uday.shetty@shalina.com</a></td>
<td><a href="http://www.shalinaresources.com">www.shalinaresources.com</a></td>
<td>Mining</td>
</tr>
<tr>
<td>Solikamsk Magnesium Works</td>
<td>9 Pravdy Street, 618541 Solikamsk, Permskii Krai, Russia</td>
<td><a href="mailto:sales@smw.ru">sales@smw.ru</a></td>
<td><a href="http://www.smw.ru">www.smw.ru</a></td>
<td>Processing</td>
</tr>
<tr>
<td>Specialty Metals Resources SA</td>
<td>Rue Tenbosch 42A, 1050 Brussels, Belgium</td>
<td><a href="mailto:philippe.lavagna@smr.hk">philippe.lavagna@smr.hk</a></td>
<td><a href="http://www.smr.hk">www.smr.hk</a></td>
<td>Trading</td>
</tr>
<tr>
<td>Standard Die International</td>
<td>12980 Wayne Rd., Livonia, MI 48150, United States</td>
<td><a href="mailto:dwaldeck@standarddie.com">dwaldeck@standarddie.com</a></td>
<td><a href="http://www.standarddie.com">www.standarddie.com</a></td>
<td>Design and manufacture of Ta components and equipment</td>
</tr>
<tr>
<td>Stapleford Trading Limited</td>
<td>Wayside, Stapleford Road, Stapleford Abbots, Romford, Essex RM14 1EJ, United Kingdom</td>
<td><a href="mailto:jim@staplefordtrading.co.uk">jim@staplefordtrading.co.uk</a></td>
<td><a href="http://www.staplefordtrading.co.uk">www.staplefordtrading.co.uk</a></td>
<td>Trading</td>
</tr>
<tr>
<td>Strategic Minerals Spain SL</td>
<td>Ctra. OU-0901 Km 14, 32558 Penouta (Viana do Bolo), Orense, Spain</td>
<td><a href="mailto:contact@strategicminerals.com">contact@strategicminerals.com</a></td>
<td><a href="http://www.strategicminerals.com">www.strategicminerals.com</a></td>
<td>Mining</td>
</tr>
</tbody>
</table>
Accurate Detection of Ta, Nb, Sn, W, etc
Rugged Design acc. to IP54
Proven In-Situ XRF Technology
Portable Battery Operated XRF Spectrometer
Fully Calibrated Mineral Suite From Mg to U (incl. Ta, Nb, Sn, W)
Typical Analysis - Ta205 = 32.51%  Sn = 55.22%
- Ta205 = 32.85% (Lab)  Sn = 55.57% (Lab)

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Typical Analysis - Ta205 = 32.73%  Sn = 55.46%
- Ta205 = 32.85% (Lab)  Sn = 55.57% (Lab)

www.ustech.co.za | info@ustech.co.za
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

Tantalex Resources
Address: 333 Bay Street, Suite 630, Toronto, ON, M5H 2R2, Canada
Email: ad@tantalex.ca
Website: www.tantalex.ca
Activity: Mining

Tantec GmbH
Address: Tantalstraße 1-3, 63571 Gelnhausen, Germany
Email: g.raab@tantec-group.com
Website: www.tantec-online.de
Activity: Design and manufacture of Ta components and equipment

Telex Metals LLC
Address: 105 Phyllis Drive, Croydon, PA 19021, United States
Email: info@telexmetals.com
Website: www.telexmetals.com
Activity: Recycling

Thailand Smelting & Refining Co. Ltd
Address: 80 Moo 8 Sakdidej Road, Tambon Vichit, Amphur Muang, Phuket 83000, Thailand
Email: procurement@thaisarco.com; sales@thaisarco.com
Website: www.thaisarco.com
Activity: Tin Smelting

ThreeArc Mining LLC
Address: Narodnogo Opolchenia 2A, St.Petersburg, Russia
Email: bovykin@gmail.com
Website: www.threearc.ru
Activity: Nb Mining

Traxys
Address: Route d’Arlon 19-21, 8009 Strassen, Luxembourg
Email: frederic.delforge@traxys.com
Website: www.traxys.com
Activity: Trading

Treibacher Industrie AG
Address: Division Hard Metals and Energy Storage, Auer von Welsbachstr. 1, 9330 Treibach-Althofen, Austria
Email: ulf.stromberger@treibacher.com
Website: www.treibacher.com
Activity: Carbides
TVEL Corporation
Address: 49 Kashirskoe shosse, Moscow, 115409, Russia
Email: root@tvel.ru
Website: www.tvel.ru
Activity: Secondary Processing

Ulba Metallurgical Plant JSC
Address: 102 Abay Avenue, 070005 Ust-Kamenogorsk, Republic of Kazakhstan
Email: daulbayevsk@ulba.kz
Website: www.ulba.kz/en
Activity: Processing

United Spectrometer Technologies Pty Ltd
Address: 26 Cabernet Street, Saxenburg Park 1, Blackheath, Cape Town, 7580, South Africa
Email: info@ustech.co.za
Website: www.us-tech.co.za
Activity: Supply of equipment for analysis

Vishay
Address: P.O. Box 87, Dimona 86100, Israel
Email: ef_i.b enbaruch@vishay.com
Website: www.vishay.com
Activity: Capacitor Manufacture

Yanling Jincheng Tantalum & Niobium Co. Ltd
Address: SME Pioneer Park, Yanling, Zhuzhou, Hunan 412500, China
Email: ireneguan@jinchengtn.com
Website: www.jinchengtn.com
Activity: Processing

Yano Metals Co. Ltd
Address: Tokyo office: 1-19-11, Dogenzaka, Shibuya-ku, Tokyo, 150-0043, Japan
Email: m_abe@yanokinzoku.co.jp
Website: www.yanokinzoku.co.jp/en/index.html
Activity: Recycling, Trading

Zhuzhou Cemented Carbide Works Imp. and Exp. Co.
Address: Diamond Road, Zhuzhou, Hunan, 412000, China
Email: zccc@chinacarbide.com
Website: www.chinacarbide.com
Activity: Carbides

Interested in joining the T.I.C.?
See page 41 for details of how to apply for membership and page 42 for a description of some of the many benefits membership can bring.
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 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 web site. 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
In order to live up to the high standards of the global commodity market, RC Inspection understands the international value chain from A to Z. Offering team members with more than 40 years’ experience and knowhow, the company is able to provide clients with the highest quality to be found in the fields of inspection, sampling, maritime and analytical services.

RC Inspection offers worldwide a complete spectrum of services on ores, minerals, concentrates, metals, noble alloys, high purity-, base-, precious and rare earth metals, non-ferrous scrap, ferrous scrap, solid (bio)fuels, agricultural products and fertilizers through a unique global network. The services are all performed according to international ISO accreditation standards ensuring clients full quality assurance.

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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 2019 are EUR 2400 for corporate members and EUR 350 for associate members, representing excellent value for money. A small increase is expected in 2020 (to be approved at the AGM in October 2019).

Corporate Membership 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 October and should be submitted at least one month beforehand.

To apply, an organisation needs to:

• Complete the application form available 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 three 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 September 2019, these are the Artisanal and Small-scale Mining Code of Conduct, Transport Policy and Antitrust Compliance Policy. All three are available at www.TaNb.org.
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.
- 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 conflict-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 held each October.

**Benefit from T.I.C.’s promotion of niobium and tantalum**
- Exhibiting and presenting at relevant conferences.
- Commissioning research and reports about the global tantalum and niobium industries and fighting stubborn myths concerning these elements.
- 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 Review and on our comprehensive website.

*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 41.*
T.I.C.’s 61st General Assembly
(conference and AGM) will take place in
Geneva
Switzerland, October 11th - 14th 2020

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 61st General Assembly in October 2020 please contact info@tanb.org by March 31st 2020.
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