calix

Innovating for the Earth

Calix News

July 2021

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Because there's only one Earth – Mars is for Quitters.

Welcome to Issue 39 of the Calix Newsletter

Phil Hodgson
CEO

The first half of 2021 has flown past. Despite COVID, we continue to make great progress across all our business lines. Our successful capital raising in March is being diligently applied to new resources to accelerate our businesses in response to the ever-strengthening investment theme around sustainability. Our first article reflects this theme, introducing some great talent who have recently joined the Calix team, as well as some of our longer-term team members such as Dr Tom Hills, working for Calix in the UK on our decarbonisation projects.

Also extending this theme in our newsletter is an article on our recent agreement with Pilbara Minerals to explore the development of the Calix technology in an Australian-based, lithium salt production joint venture for lithium ion batteries. It is great to be teaming up with Pilbara Minerals to attempt to on-shore critical manufacturing capability, capable of being renewably-powered. The importance of lower-carbon production is hitting home to Australian exporters, as export markets such as the EU legislate to commence carbon tariffs on imported goods from 2023. Other economies such as the US and China look like following this trend – and as a result Australia, through its export industries, will have a carbon tax by default in the next few years. We will have to respond quickly to stay competitive.

Our next article features one of our final stories on our LEILAC-1 project in Belgium, our pilot project to demonstrate CO_2 capture for the lime and cement industries. The results from all the test runs are being collated now in a final report from the LEILAC consortium to the EU, and the article gives an overview of the key successes of the project, as well as the key development steps being undertaken right now in our scaled-up LEILAC-2 project in Hannover, Germany.

Our Water business continues to be a strong revenue engine for the company, and we feature a recent customer success story from our Australian operation.

Our other key articles centre on our Advanced Battery materials business. Our most recent R&D results, on our unique cathode materials from our Calix technology “BATMn” process, continue to push improvements in simple, cheap, safe and more sustainable lithium battery chemistries. And we also feature our team at Deakin University and Boron Molecular, with whom we are working with closely on these developments.

Our “stop press” announcements to round out our Newsletter feature very significant progress on several fronts, including memorandums of understanding for CO_2 capture projects with ADBRI Limited (ASX:ABC), Tarmac Ltd (UK) and RHIMagnesita N.V. (LSE:RHIM), as well as our successful bid as part of the Heavy Industry, Low Emissions technology Co-operative Research Centre for $39m in government funding to help decarbonise heavy industry, and lastly a development agreement with Windship Technology Ltd (UK) to use the Calix technology in a CO_2 capture system for shipping, which contributes over 2% of global CO_2 emissions. We will feature these latest announcements with more detailed articles in our upcoming newsletters.

We continue to very much appreciate the support of all our shareholders and stakeholders as we continue another year of significant development for the company.

The Calix Team is growing!

Meet **Duncan Berry**

Senior Process Engineer

Duncan Berry joined Calix in April 2021 as a Senior Process Engineer. He brings to the company over 12 years experience in the fields of carbon capture, waste gas emission control, liquid and gas purification, water treatment and power generation. Over his career he has completed numerous projects ranging from small conceptual studies and pilot plants through to detailed design, construction and commissioning of facilities up to $100m.

Originally from Canada, Duncan moved to Australia in 2015 to support local engineering projects and has since made Australia his home. Duncan brings his experience with carbon capture to further the application of CO_2 handling, compression and treatment by Calix, particularly on brownfield retrofits of existing facilities. He looks forward to working with Calix on the commercialisation of the technology and R&D advancement for new applications.

Meet **Aoife Budge**

Chemical Engineer

Aoife is currently studying her Masters in Chemical Engineering at the University of Manchester, UK.

Passionate about ensuring intergenerational equity, so that the same standard of living and opportunities can be available for future generations, she hopes to aid in creating more sustainable industrial processes by looking at the whole supply chain and not just a process alone.

Prior to joining Calix, Aoife worked at Imperial College, where she completed empirical assessments for a proprietary pre-combustion carbon capture process. She also completed an internship for Catalysis Consulting Ltd, where she developed a series of process and technical information sheets on ‘clean’ processes such as waste to energy and the use of hydrogen as a fuel.

Meet **Matthew Leigh**

Mechanical Engineer

Matt graduated from RMIT University with a Bachelor of Mechanical Engineering in 2019. In his penultimate year of university, he completed a vacation program at Calix where he worked as a site engineer maintaining and improving site operations.

After graduating from university, Matt worked as an engineering consultant in the building services industry designing the HVAC systems for a range of building occupancies including- VicRoads Ringwood, Box Hill Shopping Centre, Eastland Coworking and Cowes Cultural Community Centre, among others.

In 2021, Matt returned to Calix to pursue his passion for sustainability, joining the engineering team as project manager of the ACTI-Mag water treatment dosing systems.

Calix and Pilbara Minerals team up to explore a new and more sustainable lithium refining process

Pilbara Minerals has signed a memorandum of understanding with Calix to jointly undertake a scoping study to evaluate a new refining process for lithium.

Under a new memorandum of understanding, Calix and Pilbara Minerals will undertake a scoping study to assess a new refining process using Calix Technology, which will be used to create a concentrated lithium salt midstream product for lithium batteries.

Pilbara Minerals owns the Pilgangoora deposit, one of the world's largest lithium resources. Currently, the ore is processed to produce a spodumene concentrate which is then shipped to customers overseas for use in lithium battery material production.

The scoping study will investigate taking fine, lower grade spodumene concentrate and further processing it on site using renewable energy to create a low carbon, concentrated lithium salt.

The Calix Technology solution involves heating fine spodumene concentrate in an externally heated kiln for a very short time. This facilitates the phase change in the spodumene mineral from Alpha to Beta without the associated melting observed in traditional rotary kilns when treating fine concentrates.

The study is expected to run until late 2021 and, if successful, Pilbara and Calix will form a joint venture to build a demonstration facility at the Pilgangoora spodumene mine in Western Australia, with the vision to produce a higher value lithium salt, while reducing carbon emissions.

Pilbara is expecting the facility to be capable of up to approximately 2400 tpa of lithium salt production capacity.

Pilbara Minerals' wholly-owned Pilgangoora Lithium-Tantalum Project, located in Western Australia, is recognised as a globally important source of spodumene.

Spodumene is a lithium mineral derived from pegmatite rock. Known for its high lithium content, spodumene is the most widely exploited mineral source of lithium.

In addition to its high concentration of lithium, lithium extraction from spodumene also typically offers lower capital costs and a shorter time from discovery to production in comparison to brine operations.

Ken Brinsden
Pilbara Minerals' Managing Director and Chief Executive Officer, said

"Calix and Pilbara Minerals have conducted calcination trials of Pilgangoora spodumene in its electrically fired BATMn reactor, at Calix's Bacchus Marsh facility, and it successfully demonstrated high conversion rates, zero dust emissions and avoided any partial melting concerns.

With these promising results, we will now move to a scoping study phase to investigate installing a calciner and downstream demonstration processing plant at Pilgangoora to allow the processing of fine, low grade ore to produce lithium salt material for export overseas."

Phil Hodgson
Calix CEO and Managing Director, said

"This proof-of-concept work demonstrated that the Calix Technology was able to achieve over 95% conversion of the spodumene ore to an extractable lithium, which is comparable to the conventional rotary kiln process, with fine, and lower grade material. Additionally, we carried out these runs on our BATMn Technology, providing additional proof-of-concept for the technology to be run off renewable electricity, such as a solar and/or wind farm.*

We look forward to working with Pilbara Minerals on this exciting project for the hard-rock lithium industry, and also other mining and processing companies in other minerals to improve their industrial processes, reduce costs and increase their sustainability."

** BATMn is Calix's first all-electric kiln, built at our Bacchus Marsh facility in Victoria Australia, for the development of our advanced battery materials.*

Calix Technology can help improve the sustainability of exisiting industrial processes through a more optimised use of mineral and chemical resources, and the use of renewable sources of energy.

The potential benefits of the Pilbara project:

* A higher value product is produced on site.

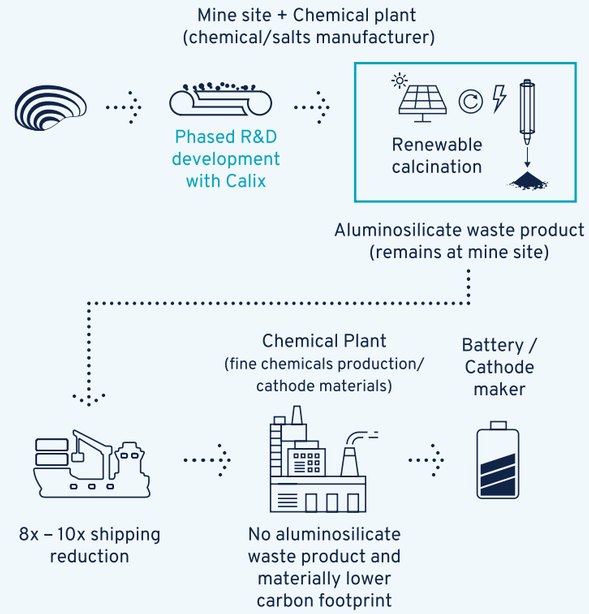
* More waste/tails are kept on site by shipping a higher lithium concentrate intermediate to refiners.

* A higher recovery is obtained from the ore body.

* By using an electric calciner, Pilbara can reduce its CO_2 footprint and deliver Environmental Social and Governance (ESG) advantages.

* The higher value intermediate will be suitable to ship directly to Europe.

Find out more:
www.calix.global/sustainable-processing



Project LEILAC Update

What makes LEILAC, utilising the Calix Technology, so unique when compared to other carbon capture technologies?

The majority of initiatives to capture carbon are based, or adapted, from processes and techniques developed for the energy and chemical sectors, and are all based on separating gases. For 60 years solvents, such as amines, have been used to strip CO_2 from gases (particularly in refineries and natural gas processing plants), and a lot of work has been recently undertaken to apply them to the cement sector at increasingly lower cost. Sorbents (including calcium looping), membranes, and enhancements are being actively developed to reduce the volumes and/or energy required to separate CO_2 from flue gases. Other approaches, such as oxyfuel, separate gases in air, rather than at the stack. All these approaches are being developed, given the increasing government, investor and stakeholder pressures to decarbonise.

Calix is focused on developing technology solutions for cement, lime processing, ensuring that the relatively pure, unavoidable CO_2 released from the mineral itself (limestone) is not contaminated by either air or flue gases.

The Calix Technology solution for cement and lime works works within a normal cement and lime plants' process. It is based on an indirect calcination system, where the limestone is heated in a special steel reactor within the pre-calciner. This unique system enables pure CO_2 to be captured as it is released from the limestone, while furnace exhaust gases are kept separate. Heating or "calcining" raw cement meal or limestone by indirect heating (LEILAC) or by contact-heat (conventional calciner) can be done in principle with the same specific energy. The process does not involve any additional processes or chemicals, and simply involves a novel “pre-calciner” design (or new kiln, in the case of a lime plant).

What is the LEILAC-1 project, and why was it successful?

The LEILAC-1 project involved the construction of a pilot plant at the HeidelbergCement plant in Lixhe, Belgium. Extensive research, development and engineering was necessary to design and construct the first-of-a-kind pilot – involving the dedicated, flexible, and professional inputs from all the project’s partners: **Calix, Heidelberg Cement, CEMEX, Tarmac, Lhoist, ECN (part of TNO), Imperial College, Quantis, PSE, Solvay and the Carbon Trust.**

This enabled the construction of the pilot on time and on budget in 2019. Additionally, studies examining integration of the plant in different configurations, and confirmation of the sustainability of the process have also been conducted by Imperial, PSE, Quantis and the Carbon Trust.

Several challenges were faced in getting the system to run, particularly the burners, feed and conveying systems. These were gradually overcome, and with system becoming increasingly stable over the latter part of the test run campaign.

The project has successfully demonstrated that both limestone and raw meal can be processed; that the CO_2 is successfully separated; and that (disaggregated from the entire system) the energy penalty for indirect calcination (LEILAC) is not higher than direct (conventional) calcination.

Other major findings are that there has been no build-up of material on the reactor’s wall; that the reactor (despite the numerous runs) is exhibiting no significant negative operational deterioration; that there have been no negative impacts on the host plant, and no impact on clinker production; and that the pilot is safe and easy to operate, with no safety incidents.

Thanks go to all the staff at Lixhe, service providers, and consortium members tirelessly working during the massive complications arising from the pandemic.

Official opening of the LEILAC-1 pilot facility in May 2019

Leilac

SO… WHAT HAPPENS NEXT?

While a follow-on project – LEILAC-2 – has started, awarded with €16m funding from the EU Horizon 2020 program and additional industry contribution, a lot more is still to happen at the LEILAC-1 site.

Several steps are currently in train to improve the throughput and calcination rates, including:

- **Improvements to the natural gas burners used, enabling the furnace to reach its design capacity;**
- **Installation of a pre-heat stack to increase the usable length of reactor for calcination – further improving throughput and calcination rates and replicating integration with a host plant.**
- **Removal of the lime cooler to install a simpler return system and improve throughput rates.**

Once tested and scaled up, (LEILAC Low Emissions Intensity Lime And Cement) technology should provide an option for reducing the costs of carbon capture and accelerate the deployment in both industries, enabling society to continue to benefit from these vital products without negatively impacting the environment.

Concrete is the most widely consumed manmade material on Earth, used in buildings, roads, bridges and other types of infrastructure. Portland cement, concrete's common binding agent, makes up just 10-15% of the material's mass but accounts for 80-90% of its emissions. Because of the scale at which it is used in our modern world, and how emissions intensive it is to produce cement, it is a top source of climate pollution, responsible for about 25% of all industrial emissions of carbon dioxide (CO_2) and roughly 7-8% of global CO_2 emissions.

Every possible decarbonisation option needs to be urgently developed and deployed. In order to reach the required emissions reductions by 2050, carbon capture will need to be applied to a vast majority of cement and lime kilns.

LEILAC partners

For more info on Project LEILAC: **www.project-leilac.eu**

A catchment dosing approach, with remote monitoring services

Calix leverages a culture of innovation to provide fully customised services such as design expertise, engineering know-how, detailed engineering, installation and commissioning to provide turnkey solutions to our ACTI-Mag customers.

Mission Beach is a mixed residential and tourist area in the Queensland wet tropics region and is home to the iconic Cassowary. A sewerage scheme was commissioned by Cassowary Coast Regional Council in 2006 to collect wastewater from three constituent communities and by two major pump stations (at Wongaling Beach and North Mission Beach).

This sewer main suffered significant corrosion due to “rotten egg gas” (hydrogen oxide or H_2S) release in the drained sections. After a very successful trial, the council approved ACTI-Mag magnesium hydroxide liquid (MHL) as their preferred solution for septicity, odour and corrosion control and awarded Calix a multi-year contract for the supply of ACTI-Mag, dosing equipment and monitoring services.

CHALLENGES

- Odour in the sewage network due to high hydrogen sulphide (H_2S) generation.
- Heavy build-up of fats, oils and greases (FOGs) in the network.
- Frequent need for vacuum truck cleaning leading to increased maintenance costs.
- High treatment costs due to high chemical use (lime and alum) and associated equipment and maintenance.

SOLUTION

- Dosing the network with Calix's ACTI-Mag liquid.
- Remote monitoring and weekly reporting to ensure ongoing control of H_2S and pH levels with the optimisation of ACTI-Mag usage.
- Elimination of STP lime dosing & reduces alum dosing.

BENEFITS

- Reduced H_2S generation and release within the catchment.
- Significant FOGs reduction within the catchment.
- Savings on STP chemical use and maintenance.
- Optimisation of chemical usage, enabled by Calix SCADA monitoring services and reporting.
- Ongoing monitoring and customer support during COVID travel restrictions.

* SCADA: Supervisory Control and Data Acquisition.

Watch our success story - Magnesium Hydroxide Liquid for odour control

https://youtu.be/GdnOuJSF1dw

Read the full Customer Story:

https://www.calix.global/what-we-have-done/magnesium-hydroxide-liquid-for-odour-control/

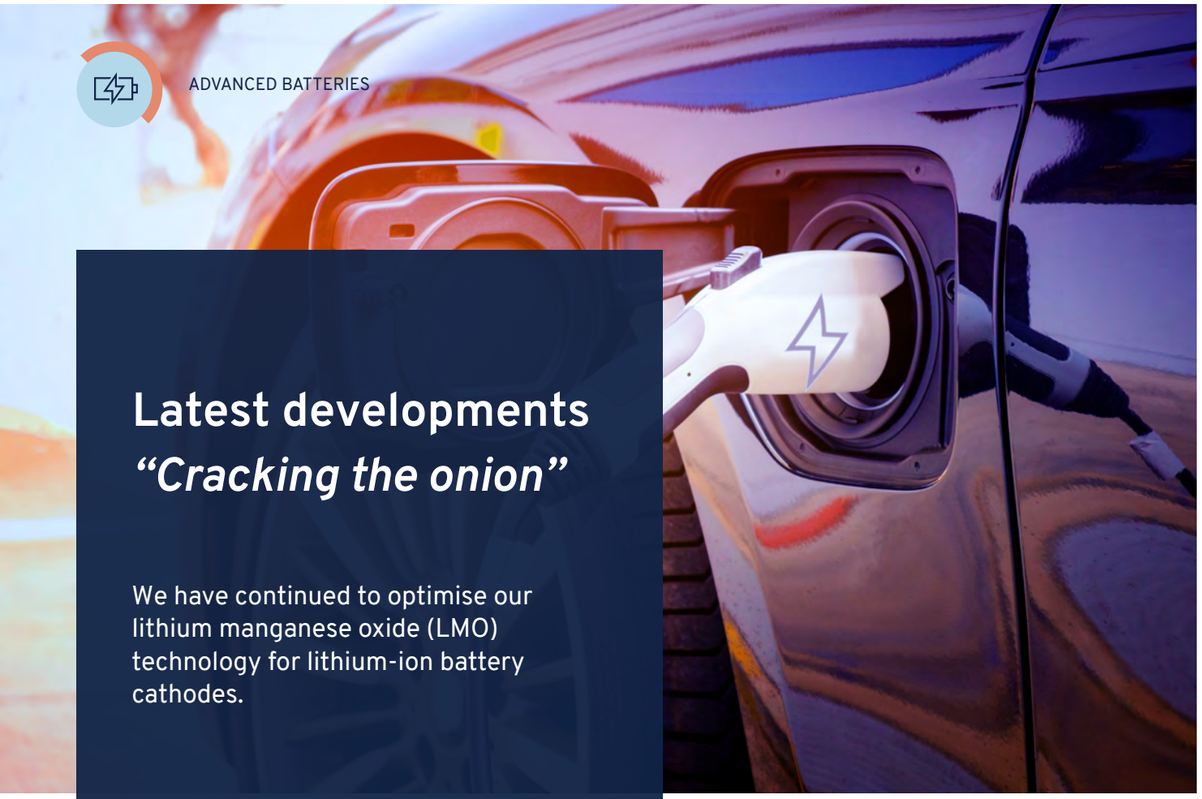
Customer success story

"Calix reports are clear, simple to read, and have really made a difference."

(Geoffrey Smart Manager Water, at Cassowary Coast Regional Council)

ACTI-Mag™

Reports



Latest developments *“Cracking the onion”*

We have continued to optimise our lithium manganese oxide (LMO) technology for lithium-ion battery cathodes.

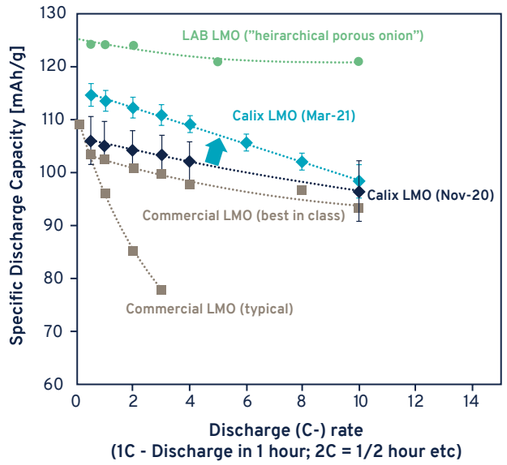
BATTERIES | An increasingly ‘hot’ topic

- Increasing concerns with regards to expensive battery materials and their recyclability, cost, safety and provenance.
- Tesla announces a return to simpler, cheaper, safer chemistries at Battery Day 2020.
- Highly prospective early results.
- Substantial global battery development network.

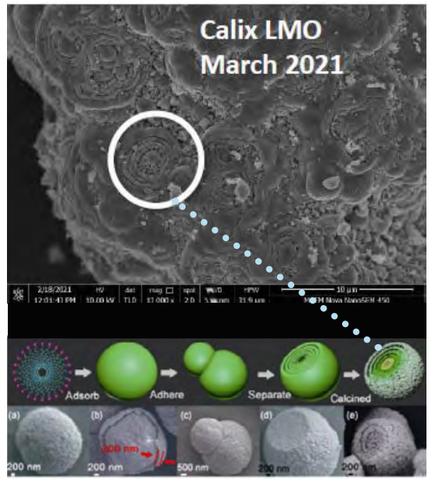
Through our BATMn Technology, we have now optimised a technique for producing manganese oxide and “lithiating” (adding lithium) through a lithium hydroxide solution (a “salt soak”) followed by a significantly shortened heating step.

This is a far lower energy route (approximately 6 times less*) than conventional LMO production and is producing “onion-ring” like structures in the tiny crystals.

The materials produced are similar in structure to the best lab-scale, exotic nano-derived materials reported in scientific literature. These structures are well-known for their superior performance. Calix's materials, produced at a much lower cost, are starting to emulate this performance, being well above the best performing commercial materials.

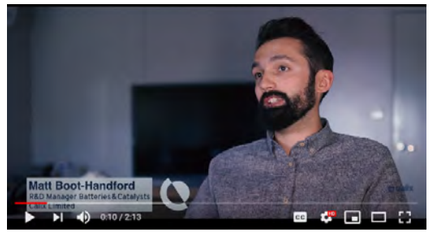


*(assuming energy requirements are propositional to lithiation time).



Lab-produced lithium manganese oxide (LMO)

Schematic and corresponding SEM images supporting the growth mechanism of onion-like lithium manganese oxide (LMO) crystalline structure



Dr Matt Boot-Handford - On the chemistry of Calix materials for lithium-ion batteries

https://youtu.be/vi4_uoU6T5I

Calix to invest another $4.5m into battery development

This additional capital will be used to accelerate the growth of our advanced battery R&D program, enhance the scope of the materials being tested and commence commercial discussions with battery materials and battery assembly entities.

$0.5M

Electrode coating, coin cell assembly and electrochemical testing equipment.

$1.5M

Expanded pouch cell testing and the battery pack development program, to avoid the need for industrial partner funding and to strengthen our commercial leverage.

$1.5 M

New, fully equipped and fit-for-purpose battery laboratory with skilled operators.

$1M

Expanded reactor capability to fully exploit processing advantages of the BATMn Technology.

More info:
https://www.calix.global/advanced-batteries-focus-area/

ADVANCED BATTERIES

Meet some of our battery partners

BORON MOLECULAR

Specialty chemical and polymer manufacturer Boron Molecular is drawing on its chemical synthesis and large-scale production expertise to develop improved electrolytes for new batteries.

Established in 2001, Boron Molecular is a leading specialist chemical manufacturer. The team consists of chemists and chemical engineers with a wide range of expertise across a number of chemical and related industries. Boron Molecular's core business is the synthesis and production of multi-kilo quantities of specialty chemicals for export to global pharmaceutical industries.

Working alongside Calix and Deakin University, Boron Molecular is actively developing a blueprint for the advanced manufacturing hub of nano-active materials, ionic liquid electrolytes and packing technology.

Dr Olivier Hutt
Director of Business Development Boron Molecular

What's the involvement of Boron Molecular in the collaboration?

The opportunity for collaboration via the CRC-P (Co-operative Research Centre Project) for Advanced Battery Materials is to develop a technology package that enables us to manufacture batteries here in Australia. Calix will be providing the electrodes, Boron Molecular will be providing the electrolytes and Deakin University will be assembling those components and then testing different configurations for efficiencies.

DEAKIN UNIVERSITY

Institute for Frontier Materials and BatTRI-Hub, Deakin University

Prof. Patrick Howlett, and Dr Prof. Maria Forsyth, both Research Fellows at Deakin University, lead the Battery Technology Research and Innovation Hub (BatTRI-Hub) within Deakin's Institute for Frontier Materials (IFM).

BatTRI-Hub is a unique, world class research and innovation centre focused on advanced battery prototyping and the commercialisation of energy storage technologies.

Calix's battery development programs draw on Deakin's world-leading expertise in ionic liquid electrolytes, which have an outstanding ability to withstand high temperatures of operation, as well as being non-volatile and less toxic than traditional electrolytes.

Professor Maria Forsyth
Professor – Research Deakin University

"BatTRI-Hub's cutting-edge prototyping facility will be used in the project to produce pouch cell batteries, optimise their performance and provide batteries for trials with global customers. We are thrilled to be working with Calix and Boron Molecular to utilise the materials manufactured in regional Victoria as the next step towards developing next generation batteries in Australia."

Prof. Patrick Howlett
Professor – Research Deakin University

How does battery research serve our race for a more sustainable world?

"A sustainable energy future requires electricity to be generated and transmitted efficiently from widely distributed and located renewable sources. The transmission of renewable electricity could in part be done via a distribution network, but we also need electricity when the sun is not shining or the wind not blowing. The problem of renewable energy intermittency is solved by energy storage solutions such as batteries."

https://youtu.be/eZ3GgkQ9iJM?t=16

https://youtu.be/eZ3GgkQ9iJM?t=28

https://youtu.be/eZ3GgkQ9iJM?t=65

https://youtu.be/eZ3GgkQ9iJM?t=132

https://youtu.be/eZ3GgkQ9iJM?t=171

https://youtu.be/eZ3GgkQ9iJM?t=213

https://youtu.be/eZ3GgkQ9iJM?t=249

Listen to what our people and partners have to say about Calix BATMn Technology, designed to make a range of nano-active materials for advanced batteries, where the need for precision control of the process conditions is critical for electrochemical performance.

https://youtu.be/eZ3GgkQ9iJM

For more info on BAT-TRI Hub, visit: https://www.batteryinnovationhub.com.au/

We believe our people are key to achieving our purpose.

Introducing Tom Hills

Research Engineer

Tom joined Calix in 2017 as a research engineer. He has worked across a range of projects, mainly in the cement & lime challenge space, including Projects LEILAC 1 and 2, ASCENT, ANICA, and SOCRATCES, helping to drive concepts from rough sketches to detailed models and then operational plants.

Tom has a degree in Chemical & Nuclear Engineering from Imperial College London, and stayed there to study for a PhD in carbon capture in the cement industry, specifically on the calcium looping process. During his studies he also provided consultancy services on industrial decarbonisation to a range of private and government clients.

At Calix, Tom leads aspects of R&D for the LEILAC Projects, specifically around chemistry, techno-economics and process modelling. He works closely with project partners to pool and synthesise their diverse expertise and knowledge. In his work in ANICA, he looks at how Calix Technology solution for lime and cement (LEILAC) can contribute to zero-or negative-emission cement and lime plants.

In his spare time, Tom enjoys gardening, playing trumpet and french horn in concert bands and spending time with his young family.

"I joined Calix to make a direct positive impact on climate change."

Calix in the media

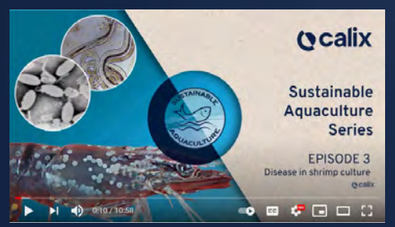
Podcast

Calix Podcast #2 RE-THINKING CALCINATION feat. James O'Loghlin & Phil Hodgson
https://youtu.be/cWsqjTOHVPg

Videos

AMALGAM Mg(OH)₂: alternative to caustic soda for wastewater treatment - with Birch Bay Water & Sewer
https://youtu.be/WdB-C23VWT0

SUSTAINABLE AQUACULTURE SERIES - AQUA-Cal+ - Episode 2
https://youtu.be/ITitiNpr7jE



SUSTAINABLE AQUACULTURE SERIES - Effects of disease - Episode 3
https://youtu.be/HSLswcIuS8w

SUSTAINABLE AQUACULTURE SERIES - Alternative culture methods - Episode 4
https://youtu.be/OIltE9trmX4

Media coverage

Calix and Pilbara Minerals plan lithium chemicals refinery.

https://themarketherald.com.au/pilbara-minerals-asxpls-and-calix-asxcxl-team-up-for-refinery-2021-05-11/
https://www.aumanufacturing.com.au/calix-and-pilbara-minerals-plan-lithium-chemicals-refinery

Cutting-edge battery and hydrogen hubs to open at Deakin University.

https://www.premier.vic.gov.au/deakin-uni-create-world-leading-clean-energy-products
https://www.australianmanufacturing.com.au/141321/cutting-edge-battery-and-hydrogen-hubs-to-open-at-deakin-university

Calix executes MOU for a lime calciner project in the UK.

https://themarketherald.com.au/calix-asxcxl-executes-mou-for-lime-calciner-project-in-the-uk-2021-07-06/

Calix and RHI Magnesita to cut CO_2 emissions in refractory materials.

https://www.aumanufacturing.com.au/calix-and-rhi-magnesita-to-cut-co2-emissions-in-refractory-materials-2
https://www.australianresources.com.au/calix-rhi-magnesita-to-work-on-co2-emissions-reduction-in-the-refractory-industry/
https://www.aumanufacturing.com.au/calix-and-rhi-magnesita-to-cut-co2-emissions-in-refractory-materials

Calix to participate in low carbon research project, backed by 39m in government funding.

https://www.australianmanufacturing.com.au/141351/calix-to-participate-in-low-carbon-research-project-backed-by-39m-in-government-funding
https://www.globalcement.com/news/item/12626-calix-joins-heavy-industry-low-carbon-transition-cooperative-research-centre-project-in-australia
https://themarketherald.com.au/calix-asxcxl-joins-39m-govt-funded-low-carbon-project-2021-07-01/

Calix awarded 1m to expand Biotech capabilities.

https://themarketherald.com.au/calix-asxcxl-awarded-1m-to-expand-biotech-capabilities-2021-06-30/
https://www.aumanufacturing.com.au/federal-government-announces-winners-in-50-million-plus-of-modernisation-grants

Pioneering technology offers cleaner future cement.

https://ec.europa.eu/research-and-innovation/en/projects/success-stories/all/pioneering-technology-offers-cleaner-future-cement
https://www.theclimategroup.org/our-work/publications/LEILAC/casestudy

Windship Technology and Calix agreement targets zero-emissions shipping.

https://www.insidemarine.com/index.php/news/equipment-and-sevices/2295-windship-technology-and-calix-limited-agreement-targets-zero-emissions-shipping
https://carbonherald.com/windship-technology-signs-a-carbon-capture-deal-with-calix/
https://www.electrichybridmarinetechnology.com/news/uk-developer-of-zero-emission-shipping-windship-partners-with-calix-on-carbon-capture.html
https://www.hellenicshippingnews.com/windship-technology-and-calix-limited-execute-joint-development-agreement-targeting-zero-emissions-shipping/
https://windshiptechnology.com/windship-technology-and-calix-limited-execute-joint-development-agreement-targeting-zero-emissions-shipping/

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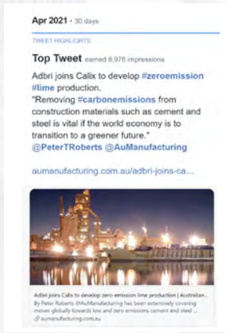

calix

Plant a tree and help us capture CO_2

Calix's world first, patented technology involves "flash" heating minerals in an externally heated kiln – to create nano-active materials that can be used in a range of different industrial applications. Calix technology allows for the direct separation of CO_2, allowing it to be used for carbon dioxide reduction in traditionally CO_2 intensive industries, such as lime and cement production. The technology is also being developed to use alternative and waste fuels, biomass or even renewable energy, to ultimately achieve carbon neutrality.

Help us reduce the impact of climate change, by planting a tree:
https://www.calix.global/news/plant-a-tree-with-calix-and-help-us-capture-co2/

To learn more about Calix technology, products, applications and services:
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