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**Interview with Mr Kobi Ben-Shabat, CEO of UltraCharge Limited**

*In this interview, Mr Kobi Ben-Shabat, CEO of UltraCharge Limited ('UltraCharge') (ASX:UTR) provides a detailed overview of the business, an outline of the lithium-ion battery market and the breakthrough technology the company is pioneering*

**Record of interview:**

**Q: What are UltraCharge's advantages over current lithium-ion batteries?**

**A: Kobi Ben-Shabat:**

Our three major advantages are:

1. Rapid Charging: Our batteries can charge a smart phone in less than 6 minutes
2. Lifetime: UltraCharge's batteries can endure over 10,000 charging cycles – that is ~10 times longer than current lithium-ion batteries ("LIB")
3. Enhanced Safety: Our technology is safer than graphite, which is the predominant material used for the anode in lithium-ion batteries

Additional advantages include:

1. Cost Efficiency: UltraCharge utilises a low-cost raw material and uniquely affordable production method
2. Simplicity: UltraCharge's technology can be easily integrated into existing battery production processes

**Q: Can you please provide an overview of UltraCharge and what the business has been focused on in 2016?**

**A: Kobi Ben-Shabat:**

2016 was a successful year for UltraCharge achieving three main goals, all completed on schedule as planned:

1. Completion of listing on the ASX, which will provide the financial stability for the initial scale up phase and additional design initiative for the future road map of the technology.
2. Completion of the knowledge transfer from Nanyang Technological University to UltraCharge's research and development team in its new established facility.
3. Finalise the scale up plans and initial experiments that would enhance and support the initial activities for commercialisation.

**Q: There are many types of batteries. What is the market size of the lithium-ion batteries that UltraCharge will penetrate?**

**A: Kobi Ben-Shabat:**

The lithium-ion market reached US\$29.68.55 billion in 2015 of which substantial portion of it is relevant markets to the Ultra Charge solution. This segment predominantly consists of energy storage and transportation solutions.



According to IDTechEx Research, the lithium-ion battery market is expected to grow by 18.5% per annum and reach US\$140 billion by 2026.

**Q: How does UltraCharge plan to commercialise its product? How and when do you expect to be talking to battery manufacturers and energy storage device companies?**

**A: Kobi Ben-Shabat:**

UltraCharge is already in discussions with regards to possible collaborations related to its unique anode offering with a wide spectrum of partners: from raw material providers to anode and cell manufacturers, as well as electric vehicle ("EV") manufacturers and energy storage companies.

Most of these potential partners have identified the advantages our unique intellectual property (“IP”) can add to their product offerings.

There are several ways for UltraCharge to be able to commercialise its technology, which include:

- License Ultra Charge IP to Anode producers
- License Ultra Charge IP to Cell producers
- Ultra Charge to produce Anode raw material and sell to anode producers
- Ultra Charge to produce its own anode devices to cell producers
- Ultra Charge may decide in the future to produce a full cell

**Q: What does the research agreement with Nanyang Technological University (“NTU”) bring to UltraCharge?**

**A: Kobi Ben-Shabat:**

The NTU research agreement defines the development of unique nano materials with an energy density that will compete with the energy density of graphite when used in lithium-ion battery anodes, while preserving the unique ability of the UltraCharge titanium dioxide (“TiO<sub>2</sub>”) anode material (rapid charging, enhanced safety and long life cycle).

**Q: What is the actual technology UltraCharge has and how has it been developed?**

**A: Kobi Ben-Shabat:**

UltraCharge’s technology is based on nano technology and the unique crystal structures of TiO<sub>2</sub>. Our technology is leaning on self-assembly of TiO<sub>2</sub> to build novel and unique long nano-tubes of TiO<sub>2</sub>. TiO<sub>2</sub> nano-tubes were discovered just recently.

This unique material has higher energy density than other TiO<sub>2</sub> structures and with fast charging and long life capabilities. The novelty of our technology is defined by the simplest, easiest and safest production methods of TiO<sub>2</sub> anode material for lithium-ion batteries.

**Q: What are your production capabilities?**

**A: Kobi Ben-Shabat:**

The production capabilities are comprised of two phases:

- The first phase is to have in-house capabilities for producing evaluation samples for strategic companies in the battery segment, this phase is planned to be accomplished by Q2 2017
- The second phase is to have production capabilities for semi-commercial quantities for anode/full battery cells. This phase is planned to be accomplished by year end 2017.

**Q: Why have you established a facility in Israel?**

**A: Kobi Ben-Shabat:**

Israel is well known worldwide as the startup nation and as such, offers a unique environment from which to grow and develop. There is significant availability of key talent and opportunities to contribute further innovative technologies that will support commercialisation.

In addition, Israel is geographically very close to Europe with strong trade agreements and tax reliefs in place that could support future collaborations with European companies.

**Q: You recently confirmed results at your Israel facility better than that achieved at NTU. What do these results mean and why is this important?**

**A: Kobi Ben-Shabat:**

The scale up process from material produced in an academic institute lab to a commercial product is relatively complicated. The first critical step is to duplicate the process performed in NTU while maintaining the same innovative specification, which has been successfully accomplished.

The second initial step towards commercialisation is to increase the size per production batch. This will at the end of the scale up process to achieve mass production in an efficient and cost effective way.

In our initial experiment we succeeded to synthesise a batch of the innovative anode raw material that is 20 times higher than what was produced in the NTU lab. This achievement will allow us to deliver sizeable material quantities for testing to potential partners.

**Q: What milestones should investors be watching out for from UltraCharge over the next 6 – 12 months?**

**A: Kobi Ben-Shabat:**

Over the next six to 12 months, investors should be watching out for the following milestones:

- Anode material sample delivery for potential customers for initial evaluation (as a first stage of testing required to confirm the performance of the UltraCharge solution).
- Fabrication of 300, 500 & 1000mA/h prototype pouch cell for demonstration and pilot purposes.
- Initial semi-mass production of anode material for selected customers as part of potential commercialisation evaluation.
- Potential partnership with customers
- Additional IP to enhance the IP portfolio of Ultra Charge
- Enhanced performance of TiO<sub>2</sub> anode

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*Further information:*

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