



ASX RELEASE

9 April 2019

UNSW-TOPFIBRE Research Programme Update Summary

Chase Mining Corporation Limited ("CML" or "Company") is pleased to announce that the most recent report from the University of New South Wales ("UNSW") contains further evidence of proof-in-concept progress in the fibre from Topaz project.

Topfibre Pty Ltd which is a wholly owned subsidiary of the Company is the UNSW's industry partner in the research project.

Attached is a summary of the report as supplied by Professor Charles C Sorrell of these results.

For, and on behalf of, the Board of Directors of Chase Mining Corporation Limited:

Dr Leon Pretorius

Executive Chairman

Chase Mining Corporation Limited

9 April 2019

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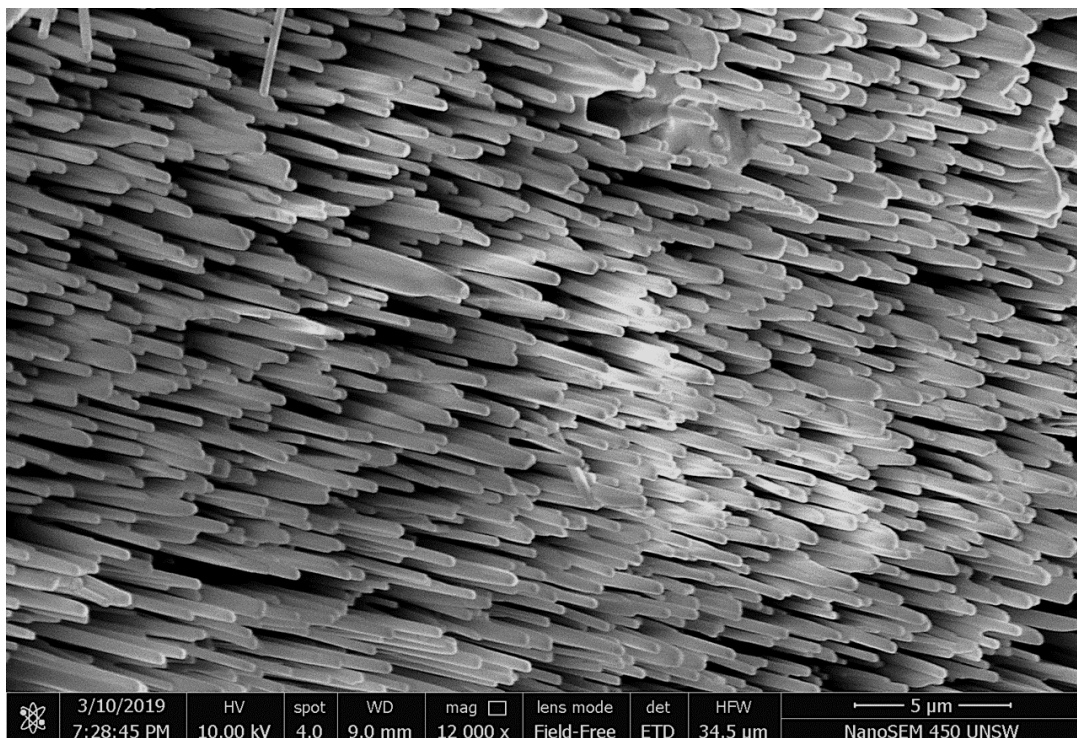
<https://www.chasemining.com.au>



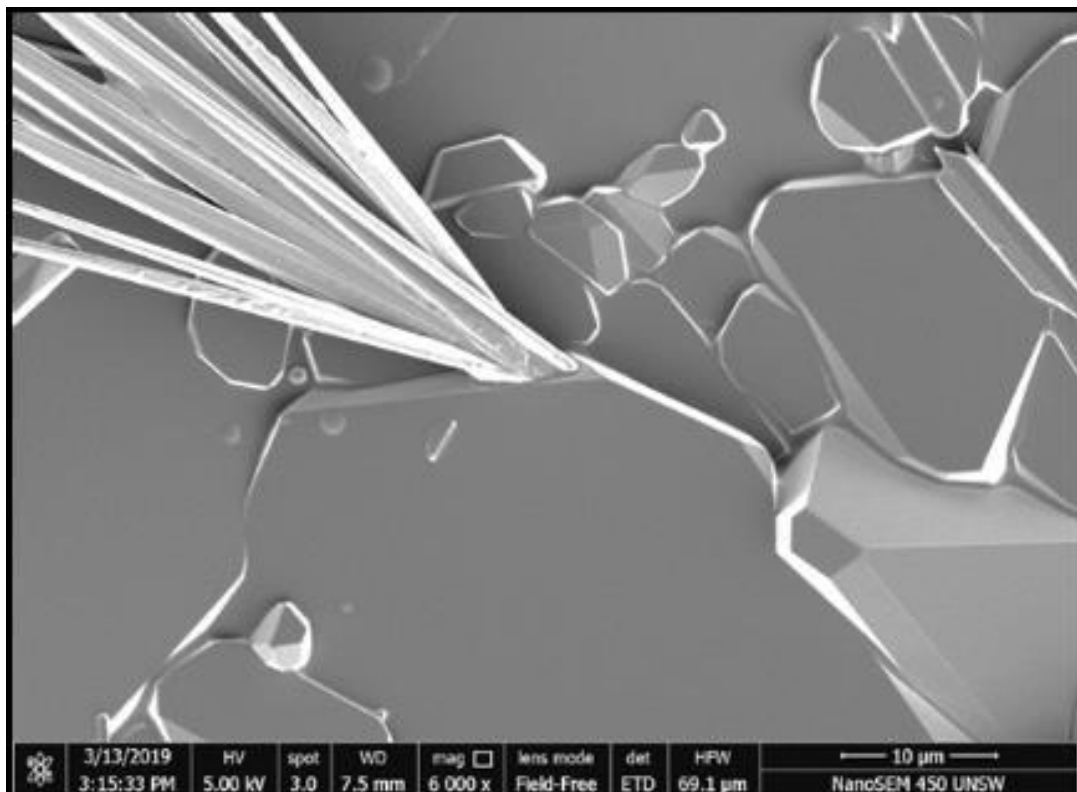
UNSW-TOPFIBRE Research Programme

Update Summary

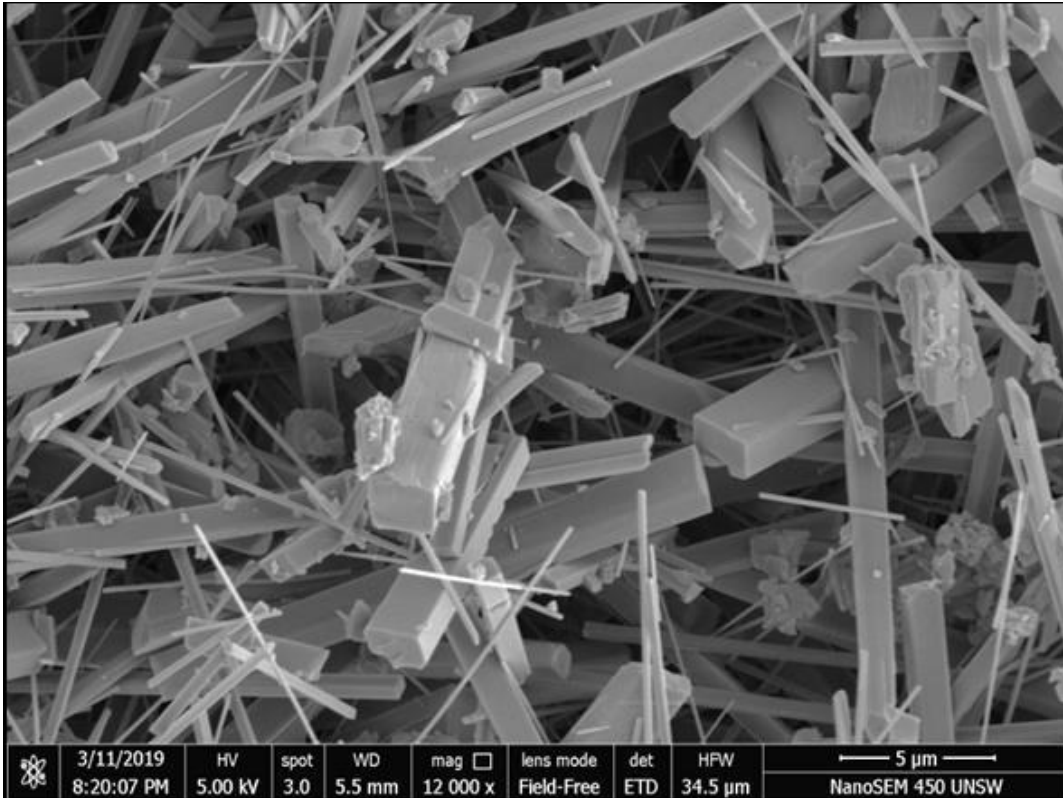
- 1) Proof-of-concept that parallel (and separable) fibres by growth on templates can be fabricated is demonstrated:



- 2) It may be possible to use as templates more readily obtained single-crystal alumina:

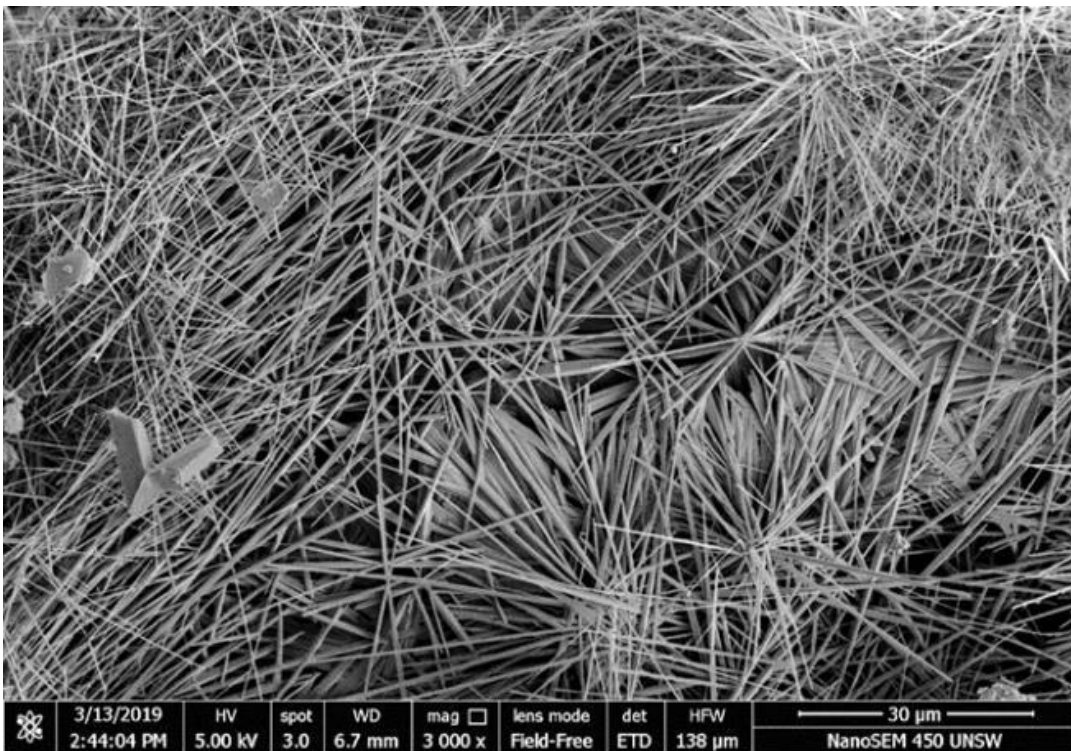


3) Conversion from thin whiskers to thick fibres ($\geq 4\mu\text{m}$) is feasible but not yet achieved:



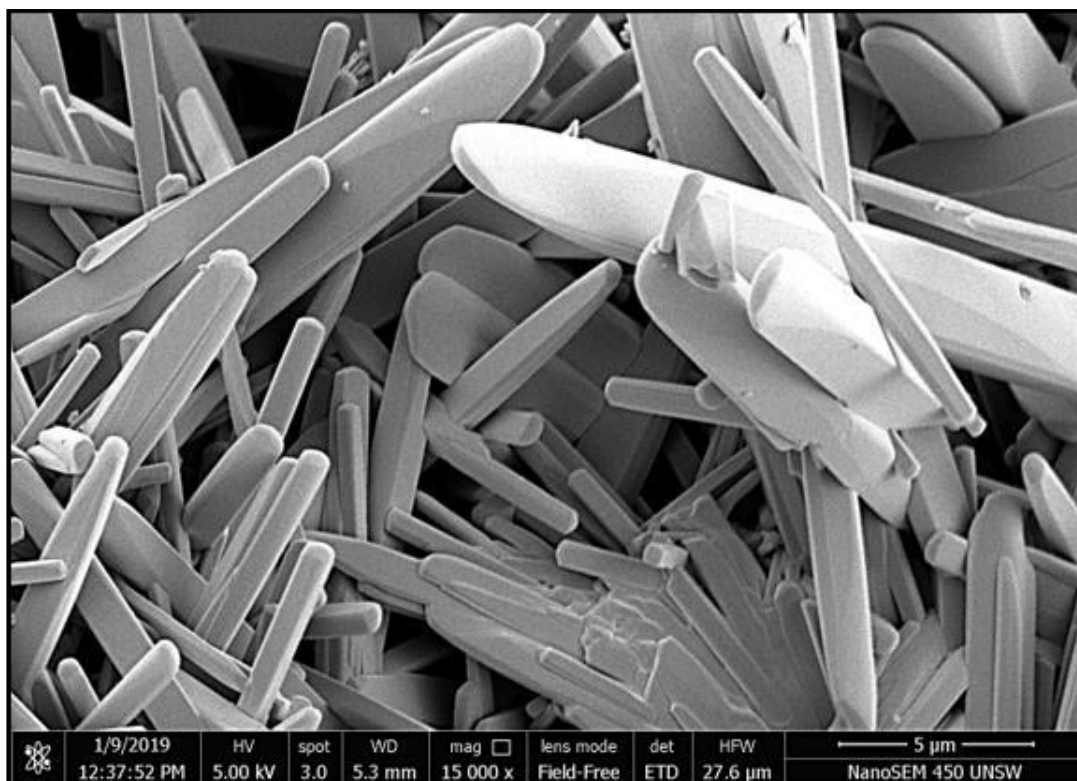
This coarsening is enhanced by the use of slow heating rates.

4) The maximal fibre length of $\leq 35\mu\text{m}$ is readily achieved:



5) The addition of a fluorine source at low temperatures appears to be beneficial owing to its ability to expose the pristine mullite template surface for nucleation and growth by removal of residual silica.

- 6) In contrast to the preceding, the use of a polycrystalline alumina substrate located above and not in direct contact with the topaz powder is capable of producing fibres of width $\sim 4\text{ }\mu\text{m}$ from the gas phase provides proof-of-concept that sufficiently thick fibres can be fabricated:



Recommendations for Future Work

- 1) Determination processing parameters to optimise parallel fibre growth.
- 2) Confirmation of separability of fibres.
- 3) Investigation of use of single-crystal alumina substrates for templated growth.
- 4) Determination of processing kinetics suitable to achieve sufficient thickening of fibres.
- 5) Development of gas phase fabrication process.
- 6) Fabrication and characterisation of compacts for metal infiltration.
- 7) Commencement of work on metal infiltration.

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8 April 2019