



SOR Ultra-Low Power Printable Memory Patent

28 October 2020 – **Strategic Elements (ASX: SOR)**, subsidiary Australian Advanced Materials, which is developing printable electronic inks for the global electronics industry, has **filed a new patent¹** to further protect the intellectual property of its Nanocube Memory Ink (ReRAM) technology.

Conventional technologies based on silicon are **rigid** and can require high levels of **power** (up to approx. 5 Volts) to operate. However large segments of **flexible** electronics (e.g. wearable healthcare sensors) can only use low power batteries which restricts the amount of processing and data storage that can be applied.

The Company's patent defines novel **ultra-low power flexible circuits** able to operate an array of Nanocube Memory Ink cells. The nanoscale circuits enable smaller memory cells and larger density of memory arrays to operate on a flexible device. Increased memory potential is designed to be achieved whilst still using less than 1.5 Volts. The circuits are fabricated with a printable ink that contains wires with diameters 100 times smaller than a human hair (nanowires).

The patent filing also covers Nanowire Ink and memory array design for potential use in other flexible electronic devices that requires similar selector/circuit functionality. This includes OLED devices, sensor devices and neuromorphic computing devices.

Charles Murphy, MD of Strategic Elements, said "We are still at an early stage of development and the Company will work with the University of New South Wales to develop a program for the technology. Our aim is to develop a 1 Megabit ultra-low power, flexible, transparent memory device within the next 6 months".

Professor Chu, from the University of New South Wales said "We are highly encouraged by our combined work on the Nanowire Ink and look forward to expanding the functionality of the Nanocube Memory technology for ultra-low powered flexible and wearable electronics".

In 2019 the Nanocube technology was recognised by the CEO of leading global research firm IDTechEx as "genuinely one of the best developments I've seen in a while in printed electronics". The addition of the Nanowire flexible circuit technology is designed to enable the Company to scale its memory technology for ultra-low power applications.

Strategic Elements Background

- Investors in SOR potentially **pay no tax on capital gains from selling their SOR shares** as the Company operates under a Federal Government program setup to encourage investment into innovation.
- The Australian Federal Government has registered Strategic Elements as a Pooled Development Fund with a mandate to back Australian innovation.
- Strategic Elements operates as a 'venture builder' where it generates high risk-high reward ventures and projects from combining teams of leading scientists or innovators in the technology or resources sectors.
- The Company is listed on the ASX under the code "SOR". More information on the Pooled Development Program should be read on the Company's website at www.strategicelements.com.au

Nanocube Memory Ink Technology Background

- The Nanocube Memory Ink is a transparent ink containing billions of nanometre scale particles. When printed onto a surface and assembled with electrodes they operate as computer memory.
- Current memory technology is restricted to RF sputtering onto more rigid silicon materials in semiconductor fabs. Whereas the Nanocube technology is a fully printed, transparent memory technology fabricated at room temperature onto non-silicon materials.
- Delivering storage on glass and plastic for transparent, structural and/or flexible electronics (freedom of design forces a re-think of new electronics product applications and categories).
- The Nanocube Memory technology was hand-picked to be one of only approx. 20 from around the world to demonstrate at the world's premier Printed Electronics event 'IDtechX'. Please see a video on a demonstrator here <https://vimeo.com/386335109/5a8d162249>.

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This announcement was authorised for release by Strategic Elements' Board of Directors.

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