

Investor Opportunity Summary: Advanced Self-Cleaning Ceramic Membrane Technology

Overview:

The global demand for clean water is rising, while traditional desalination and water treatment methods face persistent challenges—chief among them, membrane fouling. Fouling increases energy consumption, operational costs, and maintenance downtime, limiting the scalability and sustainability of water treatment solutions. Our start-up proposed in the Australian Capital Territory, in collaboration with leading Middle Eastern research and industry partners, is pioneering a breakthrough in ceramic membrane technology that directly addresses these challenges.

The Innovation:

At the heart of our offering is a patented self-cleaning mechanism for multi ceramic membrane geometries (e.g. cylindrical, slab etc), designed as a prefiltration stage for reverse osmosis (RO) desalination and other industrial water treatment applications. The core technology, the development of specific **Turbulence Promotors**, utilises both static and dynamic feed systems incorporating water jet nozzles or forms. These systems generate high-velocity, turbulent cross-flow at the surface of the membrane, continuously scouring the surface and preventing the build-up of organic and inorganic foulants. The result is a dramatic reduction in membrane fouling, minimized need for chemical cleaning, and extended membrane lifespan.

Key Advantages:

- **Reduced Operating Costs:** Lower energy demand and less frequent chemical cleaning translate to significant savings for plant operators.
- **Increased Uptime:** The self-cleaning mechanism minimizes maintenance downtime, ensuring consistent water production.
- **Scalability:** Modular design allows for parallel operation of multiple membrane units, adaptable to both large-scale industrial and decentralized community systems.
- **Environmental Impact:** Reduced chemical usage and waste generation support sustainable water treatment practices.
- **Broad Applicability:** Beyond desalination, the technology is suitable for wastewater treatment, food and beverage processing, pharmaceuticals, and more.

Commercialization & Partnerships:

Our start-up, to be incubated under the Garag national commercialization program (KACST, Saudi Arabia), will advance this technology through a technical and commercial partnership between Ceramix (Saudi Arabia) and Waldron Solutions Pty Ltd (Australia). We are actively developing prototypes, pursuing government innovation grants, and seeking strategic investors to accelerate product development and market entry.

Investment Proposition:

Investors have the opportunity to participate in a high-impact, deep-tech venture positioned at the intersection of water security, sustainability, and advanced manufacturing. With a clear path to commercialization, strong intellectual property, and a world-class technical team, we invite you to join us in transforming the future of water treatment.

Next Steps:

We welcome expressions of interest from investors seeking detailed technical, commercial, and partnership information. Please contact us to explore this opportunity further.
