

PIONEER ENVIRONMENTAL TECHNOLOGY PTE LTD

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(Left to Right)



I remember our first meeting with IPI at Singapore International Water Week in 2012. At the time, Pioneer Environmental Technology (Pioneer) was looking for a partner to evaluate the performance of ceramic membranes, found in our filtration systems for solid-liquid and liquid-liquid separation. Our company specialises in products and services for water and wastewater treatment, including the provision of unique software and hardware, turnkey waste treatment and recovery solutions, and related equipment.

In 2022, we were introduced to IPI's tech scouting service when we were looking into chemical-resistant membrane technologies for the treatment and reuse of industrial wastewater. IPI was able to offer an in-depth understanding of our needs and assessed suitable technologies and partners to address our business requirements in the membrane innovation space in Singapore.

Not only was IPI able to highlight the importance of collaboration among the different players within the ecosystem to accelerate new product development, but they also explained to Pioneer the different stages of the innovation journey including membrane chemistry development, module development and application

piloting. This prompted Pioneer to consider IPI's recommendation of a more holistic approach to partner multiple collaborators with different expertise for membrane development, module development and scale up.

Due to our limited resources as an SME, we neither had a large network of partners, nor access to the latest technologies. The IPI team were enthusiastic and helpful - merely a month into crowdsourcing for suitable partners via IPI's innovation marketplace, we managed to find Solvay, a Belgian chemical MNC with a manufacturing facility and innovation centre, in addition to a 30-year presence in Singapore. Solvay had indicated their interest to co-develop chemical-resistant polyether ether ketone (PEEK) membranes, which would complement our own R&D efforts to attain the desired properties on the substrate.

Leveraging our combined knowledge, the goal was to develop novel chemical-resistant membranes for difficult-to-treat, high-strength, solvent-containing pharmaceutical wastewaters. The membranes would have to operate under harsh conditions, such as extreme temperatures and pH levels.

By embarking on this project, we aim to broaden our offerings as a

total solutions provider in water and wastewater treatment. Deliverables for the pilot study would include demonstrating the cost-effectiveness and commercial feasibility of the membranes for pharmaceutical wastewater application. We also aim to provide improved environmental solutions for pharmaceutical clients in China, who require membrane properties that can be customised according to needs. In a market where competitors rely largely on third-party, commercial off-the-shelf products, the results of this project would provide Pioneer with an important strategic advantage.

Throughout the engagement, we benefitted greatly from the various comprehensive technical reports, coupled with the insights and analyses of our partners. We got to understand our own company from different perspectives.

I'd like to thank IPI's Innovation and Technology team, especially Senior Manager, Mr Ethan Siew, whose contributions have been invaluable as we embark on this growth chapter. If you are looking to catalyse a technical product or solution, I would recommend the tech scouting service that helps you get connected to partners who are able to translate technology into innovative solutions.