



Protecting the World's Electronics

Dr. Stephen Coulson

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Abstract:

Water damage is the second biggest killer of smartphones (with scratched or broken screens at number one). Dr. Coulson will explore the range of water protection technologies that are now available and will explain the potential benefits that can be achieved with each. Demand for such technologies is increasing as consumers are taking their phones into harsher and harsher environments and becoming more and more reliant on them for everyday life. In this presentation we will review and compare the various water protection technologies spanning from protection against humidity and weather, to splashes and spills and immersion of at least 2 metres depth for 30 minutes and show how they can increase reliability and durability of electronic devices.

P2i is a spin-out from the UK Ministry of Defence (Dstl) based on the original research work carried out at Durham University in the late 90's.

Today, P2i have successfully scaled-up for mass manufacturing across a range of key sectors, with over 500 million electronic devices processed. P2i is now the Global Leader in Liquid Repellent Nanotechnology. Dunkable® is the latest addition to P2i's product family, which is a system level solution that delivers IPx8 level protection, giving ruggedized performance without compromising on aesthetics or product design.

Biography:

Dr. Stephen Coulson has worked in the nano-coating industry for over twenty years. He developed a series of hydrophobic coatings during his Ph.D. studies at the U.K.'s Durham University. This research was sponsored by the U.K.'s Ministry of Defence, through Dstl, to investigate uses for liquid repellent nano-coatings to protect soldiers' uniforms from chemical attack. The coatings that Dr. Coulson developed provided the highest levels of defense against liquids, without affecting the breathability of the material. Dr. Coulson then went on to found P2i in 2004 to commercialise the many commercial applications of the technology. After several years of success in the life-



style, filtration and life-science sectors, Dr. Coulson and the P2i team further optimised the technology for the electronics market and now the technology is used by some of the biggest manufacturers in the consumer electronics world. After leading the R&D team to deliver the coating technology for P2i's Splash-proof, Barrier Coating, and Dunkable® products, Dr. Coulson is now focused on the productization of these technologies to embed them into the electronics sector.

Publication of speakers:

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2. Avila-Jiménez, María & Coulson, Stephen. (2019). *Polar Biol Avila-Jimenez et al 2019 suppl mat*.
3. Avila-Jiménez, María & Solhøy, • & Gwiazdowicz, Dariusz & Fjellberg, Arne & Dózsa-Farkas, Klára & Monson, • & De Smet, Willem & Stur, Elisabeth & Ekrem, Torbjorn & Coulson, Stephen. (2019). The terrestrial invertebrate fauna of Edgeøya, Svalbard: Arctic landscape community composition reflects biogeography patterns. *Polar Biology*. 3. 10.1007/s00300-019-02471-x.

Webinar on Material Science and Nanotechnology

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