

PROTECTED BY
P2i

Protected by P2i

Established in 2004, P2i, the global leader in liquid repellent nanotechnology, is focused on increasing the reliability of electronic devices by protecting them from liquid damage.

From smartphones, tablets and headsets to hearing aids and filtration systems, P2i has extensive experience partnering with OEMs across a range of global industries, to bring hundreds of millions of consumer electronic devices that are robust and durable to the market. Having integrated the application of P2i's water protective coatings into high volume manufacturing with major global smartphone and consumer electronic brands, P2i also understands the importance of the flexibility required to handle ever changing volumes across multiple production sites around the world.

Working with us

As P2i forges ahead into new and exciting markets, bringing liquid protection to the mass market. P2i will continue to serve the needs of consumers worldwide. We want our devices to be available at all times but also to ensure they will remain protected from possible liquid damage, no matter what life throws at us. P2i Dunkable provides system-level waterproofing solutions to meet the growing demand of OEMs developing new technologies that encompass a wide range of designs. P2i's technology saves manufacturers, consumers and network carriers time and money through a reduction in returns and by enhancing brand loyalty.

www.p2i.com

P2i unveils Dunkable

- the industry's most advanced hydrophobic technology for smartphones and consumer electronics

Dunkable®, which launches at MWC 2019, represents a step change in liquid protection, protecting every component in the device to IPX8 levels from liquid damage, both inside and out. The system-level waterproofing solution enables a device to operate normally even when it has been fully submerged to a depth of 2 metres for 30 minutes, and the outer case breached.

Unlike conventional mechanical seals, Dunkable provides a lifelong barrier against liquid damage & corrosion, giving consumers complete peace-of-mind. P2i's production-ready process enables a faster time-to-market with pioneering technology over the life-time of the protected product.

Dunkable uses a patented multi-chemistry approach, which is customised to the OEM's manufacturing process and handset design. It is inert, and does not degrade through impact, heat, or environmental stress or when in contact with solvents.

As well as providing comprehensive waterproofing protection, Dunkable also enables handset manufacturers to create a competitive edge through bold, flexible designs that are thinner, foldable, have smaller



bezels or bigger batteries enabling 5G phones to become reliable - without compromising the liquid protection.

OUR TECHNOLOGY

P2i's protective hydrophobic nano-coatings have been proven in

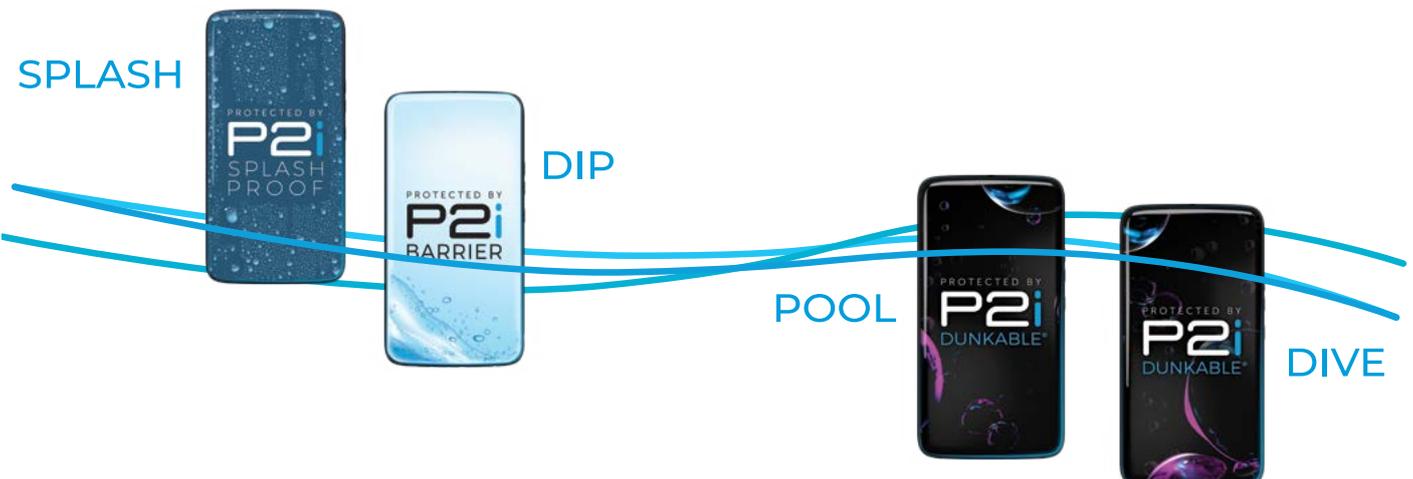
high volume manufacturing since 2011. P2i has protected hundreds of millions of electronic devices and has the capability to protect up half a billion additional devices during 2019 with Splash-proof, Barrier and the new industry-leading Dunkable system-level solution.

P2i's Dunkable, Barrier and Splash-proof technologies increase the reliability and durability of devices by preventing water and liquids from reaching the electronic components and this portfolio delivers protection for all handset price points, from high-end to mid (Barrier) and entry-level devices.

P2i prides itself on its customer relationships, and our existing customers tell us our professional expertise is a strong factor in their continued loyalty. By providing a full solution, P2i is able to better understand and address the changing needs of our customers.

IMPROVING DEVICE RELIABILITY AND DURABILITY

P2i technologies can save manufacturers and carriers from this financial loss by protecting the device from liquid damage, prolonging its life, reducing environmental impact, increasing brand reliability / customer satisfaction, and reducing churn.



P2i's Dunkable® gives industry's highest levels of liquid protection; protecting all smartphone components, even when water enters handset

- To be first shown at MWC - interactive demo to have operating handsets that exceed IPX8 fully sub merged for up to 2 hours despite holes in casing

18 February 2019, Oxford, UK - P2i, the global leader in liquid repellent nanotechnology, today launches Dunkable, a system-level waterproofing solution that enables a smartphone to operate normally even when it has been fully submerged for long periods, and the outer case breached.

It is the market's most advanced waterproof coating solution, protecting every component in a smartphone handset to IPX8 level for the life of the device.

Dunkable uses a patented multi-chemistry approach, which is customised to the OEM's manufacturing process and handset design. It is inert, and does not degrade through impact, heat, or environmental stress or when in contact with solvents.

Recent surveys have placed waterproofing and durability among consumer's most demanded features on a smartphone. Yet current methods fail easily, carry high manufacturing costs, and place limitations on handset design – making them hard to differentiate to consumers.

A 2016 YouGov poll of US consumers ranked waterproofing as third most in-demand feature; a 2017 Morning Consult/Statista survey ranked it as the most important feature¹; and a 2018 Morning Consult/Statista poll stated 88% of phone buyers think durability (listed as waterproofing and shatter proof screens) is vital.

Mechanical seals currently used to protect handsets to IPX7 and 8 levels only act as a barrier to water, allowing short circuiting if water enters the device via a cracked screen² or a de-laminated seal^{3,4}. They also use space that could be used for larger batteries, which will be essential for managing the power demands of 5G modems.

The durability and reliability of handsets are increased by Dunkable's system-level protection to IPX8. Increasing handset costs, and increased environmental awareness among consumers is causing people to keep phones for longer – average handset lifespan is set to rise by 15% in America and 5% in Europe/Asia⁵ – and with this rise, the need for more robust, longer lasting waterproofing features is paramount.

Advanced water protection technologies also reduce the cost of refurbishing, allowing more OEMs to access the refurbished phone market (set to grow from \$19bn in 2017 to \$52bn by 2022 - IDC).

Ady Moores, CEO, P2i said: "Dunkable is a world-first and represents a step change in the level of waterproofing available to handset manufacturers. The launch means that for the first time OEMs have access to the most advanced water protection capabilities that can be rolled out on virtually all form factors...not just the usual square designs.

"Its launch marks the next generation of 'Protected by P2i' products, where we will have the ability to treat over half a billion smartphones in 2019 alone."

Dunkable enables handset manufactures to create a competitive edge through bold, flexible designs that are thinner, foldable, or have smaller bezels - without compromising the water protection.

P2i's technologies are trusted to protect a wider range of products – from smartphones (utilised by the world's leading phone manufacturers including Huawei, Lenovo, Motorola, Sony and Xiaomi) to filtration systems – with over 160 patents granted or pending.

P2i is initially targeting Dunkable at smartphones, and the technology is also applicable to tablets, wearables and consumer devices, as well as industrial systems. The first devices protected by the Dunkable solution are set to enter the market in 2019.



On display at MWC 2019 - Congress Square CS126

- P2i will show Dunkable-treated handsets submerged in a tank of water, with their electronics exposed and the devices switched on.
- Visitors to the stand will be able to interact with the submerged devices - live tweeting, with their messages appearing on screen.
- World's first demonstration at MWC 2019: P2i Stand @ Congress Square CS126.

To book a press demonstration at MWC contact p2i@cubaneight.com.
Visit the P2i MWC stand in Congress Square, Stand CS126.

Performance specifications

P2i's Dunkable nanotechnology system delivers IPX8 protection to the handset, the PCB and other critical components. It will not degrade over the life cycle of the device. It cannot be removed by organic solvents or soap.

The technology has been developed to easily work within existing manufacturing processes. And reapplication can be easily performed if repairs / component replacements are carried out to a handset.

Devices treated with P2i's Dunkable passed both the IEC IPX8, with no corrosion observed after 0 and 24 hours; and salt-fog tests (2 hrs 5% salt spray, 22 hrs @ 50oC, 95% relative humidity).

In accelerated lifetime-simulation tests, the effect was retained in:

- P2i's rock-tumble tests, which simulate real-world use for the life of the device;
- in extremes of temperature and humidity (-10oC to +65oC, 93% relative humidity for 72 hours);
- thermal shock tests (MIL-STD-810F, -40 to +85°C); and
- drop tests (falling 1.5m under MIL-STD-810G standards).

And in device performance tests, there was no effect on RF, audio or optical integrity.

--Ends--

Statistics for editors

- 1) A 2016 YouGov survey of 863 US consumers placed water proofing as the third most important feature when selecting a handset.

This appears to increase with higher-end smartphones, with a 2017 Morning Consult survey of 2,202 consumers placing waterproofing as the most desirable feature among those considering the Samsung S8.

In the YouGov poll, the top 3 features were all linked to durability and this is backed by a 2018 Statista poll that stated 88% want a phone that's durable.

- 2) A 2015 survey of 6019 people by Motorola estimated that 21% of smartphone owners had at least one smartphone with a cracked screen, and 43% of those wouldn't repair it, and for 23% even when the crack is bad enough to cut them.
- 3) Motorola Care cites the average time from a phone's purchase to breaking is claimed to be just 10 weeks. It additionally states 28% of consumers will drop their phone into liquid, such as the bath, toilet or rivers.
- 4) And Feedback from repair centres to P2i suggests c.15% of IPX8 devices fail air-pressure tests within 2 weeks of activation.
- 5) The risk of damage increases with time - and life expectancy of handsets is forecast to rise with the introduction of 5G and the resulting inflated costs . In North America the average handset life expectancy will increase by 15.6% (from 22.5 months in 2017 to 26 in 2022). It will rise 5.1% in Europe (29.4 to 30.9), and 5.0% in Asia Pac (30 to 31.6) – Source, Canalys

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Press contacts

For further information, or to arrange a private demo at Mobile World Congress please contact

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About P2i

P2i is the global leader in liquid repellent nanotechnology.

Founded in 2004, P2i works with OEMs to enhance devices to make them liquid resistant and give waterproof protection, improving their reliability and enabling them to survive liquid exposure from everyday accidents.

P2i brings reliability to market, by pushing the boundaries of science and engineering to deliver world leading protective nano-coating technologies.

For more information, please visit <http://www.p2i.com> or [@P2iLabs](https://twitter.com/P2iLabs).

Ady Moores, Group Chief Executive

Ady was appointed as Group CEO of P2i in October 2016. Having previously served eight years as the Company's Group CFO, Ady supported P2i's fast growth from start-up to a substantive profitable business through his leadership of a series of successful funding rounds and responsibility for P2i's financial, legal and administrative functions.

Having qualified as a Chartered Accountant, Ady joined KPMG where he specialised in advising software and hardware companies. After spending time in the automotive industry, Ady spent three years as European Financial Controller for 3DO, a NASDAQ listed video games publishing company. In 2003, he was appointed Finance Director at Bright Things plc, an innovative interactive entertainment company, which he took from inception through IPO raising in excess of £11.5m. Immediately before joining P2i, Ady was Finance Director at 1E, a Sunday Times Tech Track 100 company specializing in PC power-management software with annual revenues of £15m and 120 employees. Ady joined P2i's main Board as Group CFO in 2008; he also serves as Chairman of all three wholly-owned subsidiaries of P2i.



Dr Stephen Coulson, Chief Science Officer, Founder and President Information Security

Stephen invented the P2i technology while carrying out his Ph.D. at Durham University on 'liquid repellent surfaces'. He was consequently employed by the UK's Ministry of Defence within Dstl to set up a plasma capability and further scale-up the patented technology for industrial applications. In 2001, Stephen moved into project managing the UK Nuclear Biological and Chemical clothing program but continued to exploit the plasma technology for a range of commercial applications. Stephen was the founding member of P2i when it was formed in January 2004 and has more than 20 years' experience in advanced material sciences and plasma processing, focusing on the commercialisation of the technology as a proven, cost-effective industrial process.



Simon Vogt, President of Sales

Simon has over 20 years telecommunications experience at Motorola, Nokia Siemens Networks and NewNet Communication Technologies, managing the proposals and Pricing operations. Simon has a multinational background having lived and worked in the UK, Dubai and the US. Simon joined P2i in July 2017 as Group Head of Sales Operations before expanding the role to take on responsibility for Sales, Business Development and Pricing. Simon has a Master's Degree in Information Technology.



Renzo Pellandini, Head of Marketing

Renzo has over 20 years' experience in semiconductors and telecommunications, having worked for Philips, NXP and ST-Ericsson as Regional Marketing Director in Europe and in Asia. He has spent over 13 years working in Asia and is currently part of the P2i team in Taiwan. He has an extensive experience in multicultural communication and business development. Renzo joined P2i in 2016 and has contributed building up and managing the marketing team as well as the product management team. He has an Electronic Engineering Degree from the Federal Institute of Technology in Zurich as well as post degree in Economical Engineering from the FH Zurich.

