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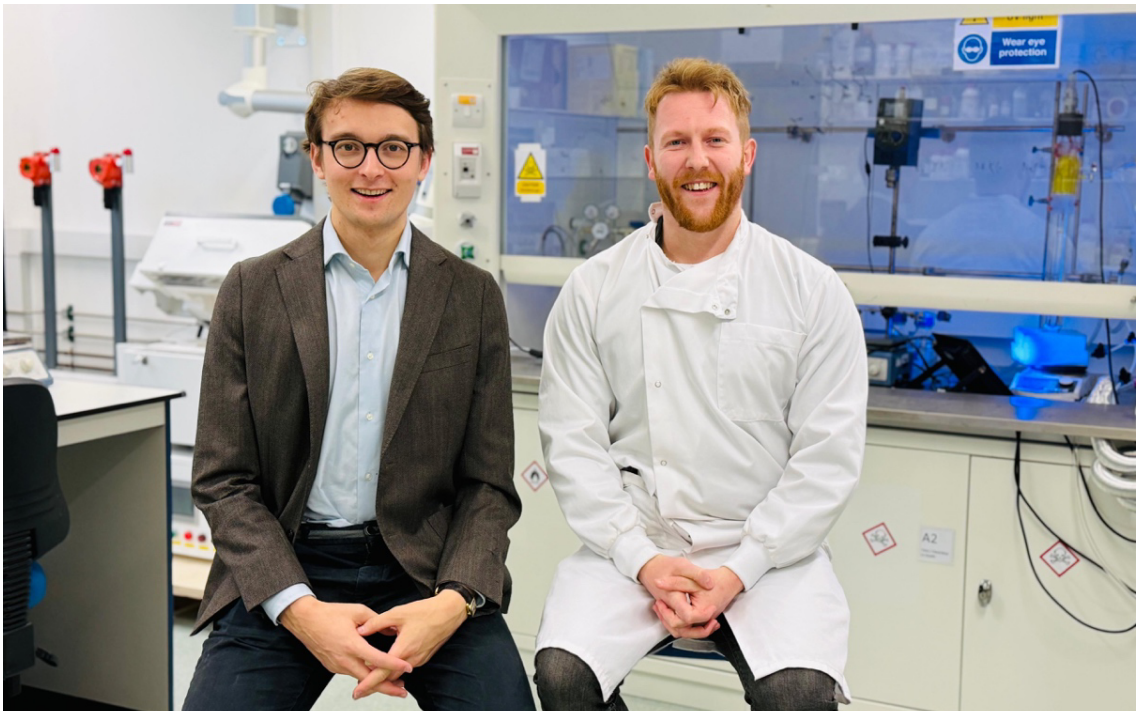
Oxford Startup A&B Smart Materials Raises Oversubscribed £1.5M Pre-Seed Round to Replace Synthetic, Non-Biodegradable Superabsorbents in Hygiene Products and Agriculture



Amaury van Trappen, Co-Founder & CEO; Dr. Benjamin White, Co-Founder & CTO

A&B Smart Materials, an Oxford-based materials science startup, has successfully closed its £1.5M (equivalent to $2M/ €1.7M) Pre-Seed round which saw significant investor interest and was heavily oversubscribed. The company is developing sustainable superabsorbent polymers (SAPs), the key materials that enable disposable diapers and sanitary products to absorb liquid and help agricultural soils retain water during dry periods. The funds raised will primarily be used to accelerate R&D to optimise A&B's sustainable superabsorbent polymer (SAP) formulations and achieve the 'trifecta' of high performance, competitive pricing and demonstration at industrial scale for hygiene and agricultural applications. A&B's long-term goal is to replace the synthetic SAP formulation in what is expected to be a $17 billion market by 2035[1].

This funding round featured three principal investors: existing backer Sake Bosch, alongside new strategic investors Caesar and Living Hope VC, with additional participation from Archipelago Ventures, Triple Impact Ventures, Cranfield University Seed Fund, Oxford Seed Fund, and several leading business angels from the Cambridge Capital Group and Oxford Innovation Finance.

[1] https://www.precedenceresearch.com/super-absorbent-polymers-market

THE PROBLEM

The global SAP market is large and rapidly expanding, with annual sales of approximately $9.1 billion, projected to reach $17.6 billion by 2035[1]. Each year, an estimated 4.1 million tons[2] of SAPs are produced, the vast majority of which are used in absorbent hygiene products such as nappies and menstrual pads. A smaller but growing share is used in agriculture, with additional applications across medical products, construction materials, consumer goods and water treatment.

Today's synthetic SAPs are highly absorbent but also highly persistent. Made from fossil-based materials and designed without biodegradability in mind, they accumulate in the environment as microplastics. Over time, these materials contaminate soils, waterways and oceans, contributing to one of the world's most pressing pollution challenges. Single-use nappies, for example, which rely on synthetic SAPs, are one of the most widely disposed of products in the world: 250 million nappies are disposed of globally every day, with an estimated 300,000 disposable nappies sent to landfill or incinerated every minute[3].

As António Guterres, UN Secretary-General, said at 2025 World Environment Day: "Plastic pollution is choking our planet – harming ecosystems, well-being, and the climate […] it infiltrates every corner of Earth: from the top of Mount Everest, to the depths of the ocean; from human brains; to human breastmilk."

THE SOLUTION

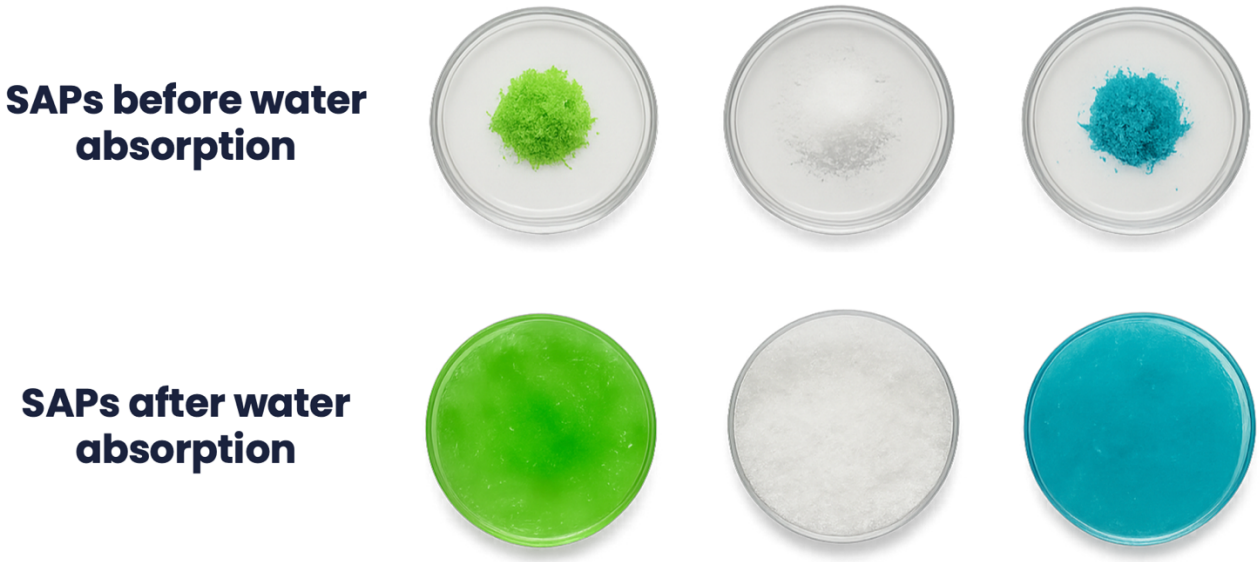
A&B Smart Materials aims to enable the global transition away from persistent, fossil-based superabsorbent polymers towards high-performance, fully biodegradable alternatives. By combining cutting-edge polymer science with abundant natural feedstocks, they are building the technological foundation for the next generation of absorbent materials, materials that deliver top-tier performance and are compatible with established industry processes, while meeting accelerating regulatory, environmental and consumer demands.

A&B's technology is built on novel modified biopolymers sourced from abundant, low-cost natural materials. Despite a small team and a short development timeline, their material is already approaching commercial performance standards in both hygiene and agricultural applications. This foundation technology already offers a competitive cost outlook, and the funding will support further optimisation of materials and manufacturing processes as they move toward industrial scale.

The broad base of investor support that A&B have attracted to this early round enables them to benefit from a wide range of skill sets and networks, positioning them well for the next stage of investment.

[1] https://www.precedenceresearch.com/super-absorbent-polymers-market
[2] https://www.nonwovens-industry.com/superabsorbent-polymer-makers-in-the-world-and-their-production-capacities/
[3] https://www.weforum.org/stories/2023/08/disposable-nappies-landfill-plastic-circular-economy

THE PRODUCT



A&B Smart Materials sustainable SAPs before and after water absorption (pigments added for visual purposes).

QUOTES

Amaury van Trappen, Co-founder and CEO, A&B Smart Materials: "*We're incredibly grateful for the confidence our investors have placed in us. This funding gives us the momentum to accelerate our progress, strengthen our team with exceptional talent and take the next critical steps toward delivering sustainable absorbents that will benefit millions of people in the years ahead. It marks an important milestone on our journey toward transforming an industry that urgently needs change*."

Dr. Benjamin White, Co-founder and CTO, A&B Smart Materials: *"Synthetic super absorbent polymers are causing a huge problem in our modern world. Polluting our land, our water, our food, and even us with microplastics. We intend to completely replace these products with biocompatible and biodegradable materials, without compromising on product performance or affordability. We are incredibly grateful to our investors and the faith they have in us. We look forward in the coming years to carrying this product to market, and hopefully, making the world a better place."*

Sake Bosch, a prominent private VC investor based in the Netherlands who made many international deep-tech investments related to climate tech, has supported A&B Smart Materials since the very beginning in 2023. In this round, he reinforced his commitment by participating significantly above his pro-rata share. "*I am proud of the progress the team has made and encouraged by the validation from this new group of investors,*" Bosch said.

Gregor Hendrik Unger, Co-founder and Managing Partner, **caesar.**: "*The combination of Ben, a world-class chemist, and Amaury, a hyper-driven Cambridge-educated entrepreneur, gave us a high conviction to begin with. Secondly, the market is huge and the problem compelling: current non-degradable superabsorbent polymers impose a heavy burden on the environment. Lastly, their early lab results are extremely promising. They are engineering their biodegradable SAPs to specifically match the quality and production costs of current SAPs*."

Leen de Bruyne, Founding partner of **Living Hope VC**: *"A&B Smart Materials stood out as a rare combination of team, technology and timing. Amaury and his team have demonstrated exceptional*

commercial and technical progress in a remarkably short period of time, with a very small and highly efficient organisation. The regulatory environment creates a clear market pull for sustainable alternatives, and A&B's approach is one of the few we see that is both scalable and compatible with existing production lines. We believe the company can grow into a major global player in a market worth several billions, and we are excited to support them with our European network of investors and ambassadors."

Lucy Mortimer, Founding Partner, **Archipelago Ventures**: "*Microplastics from synthetic fossil-based SAPs that end up in our soils, oceans and waterways are a huge problem for planetary and human health. Currently we have no viable bio-based, biodegradable alternatives to fossil SAPs. A&B Smart Materials offer a compelling opportunity to deliver significant impact in reducing GHG emissions and the risk of microplastics release at scale through its unique technology and approach."*

Nikola Lugonja, **Triple Impact Ventures:** "*At Triple Impact Ventures, we backed A&B Smart Materials because they address a huge environmental problem in a multi-billion-dollar industry with a solution that can scale. The founders' energy, professionalism and maturity stood out immediately – they translated a complex chemical solution into a crystal-clear value proposition and were refreshingly honest about use cases, risks and next challenges. Their bio-based SAPs are already very performant and approaching price parity with fossil-based polymers, despite the company being at an early stage. Replacing fossil-based, non-degradable polymers that end up as persistent microplastics in soils and hygiene products is exactly the kind of systems change we want to see. Beyond capital, we aim to support A&B with our network, market credibility and warm introductions to partners and future investors, as well as sharing our experience from building and backing other startups."*

Hugh Smith, Angel Investor with 25 years' experience and 70+ investments to his name, member of **Oxford Innovation Finance**: "*Because of the enormous environmental problem of waste disposable nappies, I was immediately struck by the novel technology being employed by A&B Smart Materials and the potentially game-changing impact this could have in a couple of large markets. During the due diligence process it became apparent a lot of scientific and commercial progress had been made in a short period of time. During a site visit and numerous conversations, I was very impressed with Amaury and Ben, the Founders, who combine deep technical expertise with a solid commercial focus and a strong desire to succeed. I am excited to see where the team can take things in the next few years.*"

Prof. Stephanie Hussels, Director of Bettany Centre for Entrepreneurship**, Cranfield University**: "*At **Cranfield University Seed Fund**, we are drawn to ventures that combine scientific depth with clear commercial urgency, and A&B Smart Materials stands out on both fronts. Amaury and the team have achieved impressive technical progress in a very short period, supported by a well-defined development and licensing pathway and early positive traction. Their bio-based SAP technology addresses a timely and substantial market need in the shift away from synthetic microplastics. What resonates with us is their ability to deliver a differentiated, sustainable solution using widely available, low-cost inputs and standard production methods. We believe A&B Smart Materials has the potential to become a category-defining company, and we are delighted to support the team at this stage.*"

***Michael Hutson**, the Principal of the **Oxford Seed Fund** and Associate Fellow at the **University of Oxford Saïd Business School**: "At Oxford Seed Fund, we backed A&B Smart Materials because*

they are solving a quietly enormous problem hiding in plain sight: synthetic superabsorbent polymers that take centuries to degrade and are on the brink of regulatory phaseout. A&B is the first team we've met that brings a scalable, fully biodegradable alternative that can drop into existing production lines. What convinced us was the combination of technical maturity and commercial traction at an early stage. The founders had already demonstrated customer traction with global leaders demonstrating a level of industry pull that's rare for a company this young. The performance of their material is already very impressive, and the pathway to full parity was clear in their plan. Replacing petroleum-based SAPs - a multi-billion-dollar market with imminent regulation - is a generational opportunity. A&B Smart Materials is one of the few teams with the science, timing and commercial validation to make that systems shift real, and we're excited to support them from Oxford."

FURTHER COMPANY INFORMATION

A&B Smart Materials was founded by Amaury van Trappen (CEO) and Dr Benjamin White (CTO). Amaury holds an MEng in Mechanical Engineering from the University of Bath and an MPhil in Management from the University of Cambridge, bringing strong commercial and strategic expertise. Ben holds an MChem in Chemistry from the University of Bath and a PhD in Nanotechnology and Smart Materials from the University of Oxford, contributing world-class scientific expertise in polymer chemistry and advanced materials.

A&B Smart Materials won the TBAT Innovation Challenge 2025, and was 2nd runner-up of the 2025 BBIA Demeter Award for the Startup Category at the Royal Society of Chemistry in November 2025. They were selected for the Creative Destruction Lab in Paris (Climate Stream) and for the inaugural EarthScale Accelerator programme. They were also awarded an equity-free grant of £91,250 in 2025 from the Henry Royce Institute of Advanced Materials, in partnership with the University of Warwick Polymer Group and Reactwise. Lastly, they also collaborated with the Centre for Process Innovation to support formulation optimisation and scale-up investigations provided as part of the Innovate UK Business Growth support.

A&B Smart Materials operates from the University of Oxford's Begbroke Science Park, providing access to cutting-edge laboratories, equipment and analytical capabilities that accelerate rapid experimentation, testing and material optimisation.

INVESTOR BOILERPLATES

Sake Bosch, a prominent private VC investor based in the Netherlands who made many international deep-tech investments related to climate tech, has supported A&B Smart Materials since the very beginning in 2023.

caesar. is a pre-seed Venture Capital fund investing in DeepTech, HealthTech, GreenTech, and FinTech startups. The fund is based in Munich, Germany, where it all started at Kaiserstrasse ("Caesar Street") when the founding partners decided to turn their passion to supporting outstanding founders in creating a better tomorrow through technology.

Living Hope VC is a European faith-driven venture capital fund investing in early-stage and growth-stage technology companies across HealthTech, CleanTech, AI/Robotics, and Agritech. The fund combines professional venture investing with a "fourfold return": financial, social, sustainable, and spiritual.

Living Hope VC backs founders who are solving real problems in large international markets, building scalable products with strong unit economics, and demonstrating high growth potential.

With a unique pan-European network of entrepreneurs, venture studios, values-driven investors and partner VCs, Living Hope VC gains access to high-quality deal flow across 12+ countries. The fund is led by founding partner Leen de Bruyne and Jordan Kuhnemann and supported by an experienced investment team and an international advisory board.

Archipelago Ventures is an impact-led investment firm focused on Venture Capital investment into startups developing new and novel technologies, products and processes designed to reduce the impact of the materials we use and the global supply chains that are reliant on them. It invests through its fund, the Archipelago Circular Economy “ACE” fund, and provides investment advice to the Circular Plastics Accelerator.

Investing into deep-tech solutions that are scalable globally, its investment approach aligns competitive financial returns with positive social and environmental impact. Its investments support material innovation and efficiency, novel delivery and re-use, and advanced sorting data and recycling technologies which can reduce material inefficiencies and waste, decarbonise complex Scope 3 emissions within supply chains, and transform the way we use and dispose of materials.

Triple Impact Ventures (TIV) is a Vienna-based family office backing impact-driven founders tackling the triple planetary crisis of climate change, biodiversity loss, and pollution. We invest at pre-seed and seed across Europe in scalable software and hardware solutions, and typically co-invest with like-minded angels and VC funds.

Cranfield University supports early-stage innovation through the Cranfield University Seed Fund. The fund provides early-stage investment to high-potential startups. The aim is to help breakthrough ideas overcome early funding barriers and accelerate their route to market. Alongside funding, ventures benefit from access to Cranfield’s deep expertise in science, engineering and management, as well as mentoring and networks within the University’s entrepreneurial community.

Oxford Seed Fund is the University of Oxford’s student-led venture fund backing ambitious founders at pre-seed and seed across deep tech, AI, life sciences, climate and next-gen enterprise software. Operating inside Saïd Business School, the fund brings together a cross-disciplinary team of student investors with deep networks across Oxford’s ecosystem. We back founders with technical depth, commercial clarity and a bias for action. We've made more than 40 investments in the last two years. At OSF, we are founder friendly, invest early, move quickly, and stay close to the founders we back - acting as their first believers inside one of the world’s most concentrated hubs of talent, Oxford.

CONTACT & MEDIA PACK

For further information, please contact:

- Archipelago Ventures at comms@archipelagoventures.vc

For visual media pack, please refer to:

- Team, product, logo visuals: Click here