Excited About Coatings

Developing Innovative Insect-repellent and Disease-preventing Surface Treatments

Affix Labs over the past 5 years has specialized in binding technologies and commercialized first products in 2019. The proprietary technology focuses on binding safe chemicals in a way that boosts their effectiveness and longevity and led to products such as insect-repellent textile coating focusing on fighting insect-borne diseases such as Malaria, Dengue and Zika viruses. Established as a company in spring of 2020 and headquartered in Helsinki, Finland, the start-up company has harnessed its experience in disease prevention to create a long-lasting surface treatment proven to kill bacteria, fungi, and viruses including Covid-19. CHEManager asked CEO Tom Sam about the beginning and the future plans of the company.

CHEManager: Mr. Sam, Affix Labs was officially founded this year but has been operational for 5 years. How did it all start?

Tom Sam: The concept behind Affix Labs started when I was living in China for 7 years and worked in both textiles and a Chinese tech start-up. In 2015, when the first large outbreaks of Zika started appearing in Brazil and spreading beyond the borders we started looking into potential solutions to protect pregnant women from the virus. That research showed that whilst some of the most common pesticide solutions using Permethrin had some effectiveness, it was far from ideal considering its environmental and human health impact, which is when we started the development of Repeltec. This initially started us down the route of creating Repeltec-treated textiles using a safer chemical.

Next, we took it a step further along the line of disease prevention and started to integrate anti-microbial active ingredients into a coating, creating our product Si-Quat. Initially we were looking at ways to stop the spread of microbes that cause diarrhea.

Then the Covid-19 pandemic happened. Because of our relationships, we were able to get Si-Quat tested in a level 3 lab in Portugal proving that our coating was effective against the virus. This led us to make a temporary shift in our focus, but it is important to not forget that all the other issues have not gone away, and Malaria, Dengue and other diseases are still affecting millions worldwide.

What eventually led to the establishment of the company?

T. Sam: The company, Repeltec, started as a concept and was then officially established in the UAE first, where I am based. As we have grown and expanded our focus, we have rebranded ourselves to Affix Labs. Our company is a truly international organization; we employ the best people around the globe and are therefore not limited to talent in just one country. As we are growing fast we decided that Finland represents the right climate and culture for us to base the company out of, and relationships in the university of Helsinki also meant that we could easily test things like the durability of our coatings under various conditions.

What does 'Affix Labs' mean?

T. Sam: Affix stands for stick, attach, or fasten to something, and this is what our focus is on and is the foundation of our approach to tackling big, real-world problems. We create solutions focused on coatings and active ingredients. The word Affix just seemed to be the perfect description of the core of what we are doing.

Which obstacles did you have to master so far?

T. Sam: We knew when starting the company that the world is fast changing and that if we were to stand a chance against all of the chemical giants we would need to not only have the best working methods, but also think outside of the box and reframe the approach to issues that are being tackled. This has meant finding the right people and partners and being determinedly forward-thinking and innovative in how we work.

Also, our people are spread across the globe in multiple time-zones, as are the companies that we partner with, and these partners are based in many different countries, each having their own ways of doing things. This makes coordination and choosing the right partners and people a real challenge. Sometimes this is a fantastic experience and sometimes things don't go as smoothly.

Often the challenges are easily solved, but on occasion we must make difficult decisions not to move forward with potential partners. These decisions are not made lightly but in a remote working company, we do feel that it is more important to not only support but also be sure that we can trust the people we work with to reflect our ideals.

What kind of support, advice or funding did you receive?

T. Sam: Affix Labs has received a grant from EIT RawMaterials—initiated and funded by the European Institute of Innovation and Technology—in support of the developments around Si-Quat as an effective antiviral solution ideally suited to combating Covid-19. Besides this funding we have grown the organization without outside investments. We are, however, raising funds now to make the next steps.

What have been the most exciting projects so far?

T. Sam: We are growing fast and have new distributors coming on board weekly, especially now with our products that are effective against SARS-CoV-2. We also have great new developments going on with our new Clean 'n' Coat product line that cleans and leaves an anti-microbial coating at the same time, and we are ramping up to go into consumer products.

The things I get excited about are not always the most glamorous achievements, but our new partnership with the National Institute for Communicable Diseases in South Africa or our projects in Kenya get me excited.

We have just worked with two amazing companies, Logonet and Waste2Wear, on creating the perfect uniforms for the Jane Goodall Institute in Tanzania. The uniforms are made from recycled plastic bottles and use our Repeltec insect-repellent textile treatment. I have been a fan of Jane Goodall ever since I had heard about her work many years ago, so being able to create their uniforms is something amazing.

Tom Sam, founder and CEO, Affix Labs

What will be the next steps to develop the company from where you are now?

T. Sam: Our next challenge is now to keep up and carefully scale with the growth of the business. Getting the right people on board with the skill-sets and the right mindset is now key for us. The future of our company, and I believe every company, is to keep innovation going that is focused on creating products that take both people and the environment into account.

Business Idea

Creating Innovative Coatings

Affix Labs is a company that is breaking through the traditional industry of chemical coatings with a new approach that has the potential to protect millions of people from diseases. Originating as an offshoot of a textiles company researching ways to protect pregnant women from Zika virus, the company has evolved over the last 5 years to specialize in coatings that work on a multitude of surfaces and have a variety of effects.

Using carefully selected active ingredients that show the desired results in environmentally conscious and/or human safe ways, they have specialized in binding these ingredients in a solid state to surfaces, creating a layer that maintains its effectiveness but is durable and long lasting. With funding from the EU's EIT RawMaterials fund, they have ramped up testing and development of these solutions ready for global launch. The two main segments of products are insect-repellent and anti-microbial solutions.

Insect repellents: The first solutions developed by Affix came before the actual founding of the company with the textile treatment Repeltec. This, bound to clothing, created garments that protect wearers from insect bites, specifically disease-bearing varieties such as mosquitos. Under Affix this has now expanded into coatings that can be applied to almost any surface such as walls, textiles, furniture, pet accessories, outdoor gear, and beds. Treated surfaces are given skin-safe, long-lasting insect repellent properties that work even beyond the edges of treated areas but without killing insects or adversely affecting the local environment.

Anti-Microbials: The anti-microbial solution is based on Si-Quat, a highly effective anti-microbial that works on 99.9% of viruses, bacteria and fungi, and has been proven to work against Covid-19. As a highly durable semi-permanent coating it kills viruses and bacteria whilst being safe to humans and animals, and lasting potentially years if untouched. A second solution based on the same active ingredient is a combined cleaner and coat named Clean 'n' Coat, that replaces normal surface cleaners and leaves a thin anti-microbial layer that can last up to a week.

■ Affix Labs Oy, Helsinki, Finland
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Elevator Pitch

Non-Invasive Protection

Affix Labs is focused on providing invisible protection to the people that need it the most. The long-term aim is to solve real world problems with simple solutions. The long-term focus of the Helsinki, Finland-based start-up company is to apply the technology as a cost-effective solution to protecting people from potentially deadly diseases like malaria, dengue or the microbes that cause diarrhea. In the immediate term there is significant growth in solutions focused on hygiene and specifically the Covid-19 pandemic are amongst the developments in the last years. These two goals have now combined and are happening at a much faster rate than initially expected.

Whilst research and development continues, routes to market are already being built for large scale commercial or government use through distribution partners around the world, and consumer solutions with products coming to the market in Q1 of 2021 allowing wide spread use on multiple levels.

Although headquartered in Finland, the team is all over the world from Somalia to Thailand, from the Netherlands to the United Arab Emirates. The dynamic team makes it possible to relate to communities that are otherwise far away from the people developing the products.

Partnerships with universities and testing facilities that represent a wide range of labs in the EU, South Africa, Uganda, India and the UAE, are used to provide a solid foundation for the claimed effectiveness of the company's solutions.

Milestones

2018
- Repeltec textile treatments come to market

2019
- Repeltec Active Coatings finish testing

2020
- Si-Quat tested and proven on Covid-19 and support received from the EU EIT RawMaterials fund to further research and release
- Si-Quat launched

Roadmap

2021
- Q1: Launch of first Repeltec and Si-Quat consumer products
- Q2/3: Launch in American markets and in all major global regions

Si-Quat, invented by Affix Labs' Repeltec development team, is based on the safe disinfectant quaternary ammonium, which is chemically bound to align silane quaternary ammonium molecules (silane quats). Testing has shown Si-Quat to adhere to almost any surface, performing as a durable surface treatment.