

PRESS RELEASE

Redefining waste to find beauty in decay

Ground-breaking waste extraction process offers sustainable alternative to palm oil

Asynt report how **Revive Eco** (Glasgow, Scotland) are using their **ReactoMate ATOM jacketed lab reactor** and **Condensyn MAXI system** to **scale-up** an innovative patent-pending process that allows them to strip out an oil from waste coffee grounds which has a very similar fatty acid profile to palm oil.

Coffee is one of the most popular drinks worldwide with around two billion cups consumed every day. With an estimated average of 11 grams of fresh ground coffee going into each cup, around 381,000 tonnes of ground coffee are brewed every year, resulting in an estimated quarter of a million tonnes of wet, waste coffee grounds going to landfill. Revive-Eco are working to change that.

Many products from cosmetics to food and drink, contain palm oil as a key ingredient – the production of which has a devastating impact on our rainforests and the eco systems that depend on them. Revive Eco's coffee-derived alternative to palm oil offers the same versatile application benefits whilst diverting matter from landfill and ultimately protecting the planet.

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Scott Kennedy, co-founder of Revive Eco said “We are passionate about creating innovative solutions to protect the environment. Our coffee grounds extraction process is having a massive positive impact on waste reduction and production of accessible and sustainable chemistry resources already and this is just a start as we are investigating additional potential derivatives as well as the coffee oil”.

Dawn Thompson, senior process chemist at Revive Eco commented “Until relatively recently we were only able to make the coffee oil on a small scale in the lab. Growing awareness of the need for sustainability, particularly in the cosmetics and food and drink industry, meant the demand for our coffee oil and the coffee oil products was increasing rapidly. We were in a position where, if we were not able to scale-up our process, we would have long lead times for our products and eventually would not be able to meet client demand. Asynt provided the ideal solution to our problem. Asynt’s Dr Kerry Elgie worked with us closely to understand our needs and provided us with a bespoke 20-litre jacketed reactor with the ATOM stand, overhead agitator, heater chiller unit and a large-scale condenser which is vital for us when we are isolating our coffee oil. This Condensyn MAXI waterless condenser fits beautifully into our ethos at Revive where we strive to find new possibilities in old problems, and because it’s waterless we are quite literally saving thousands of litres of water per run. It’s also a lot a lot safer and a lot easier to run in the laboratory than a water condenser as we’ve eliminated the risk of water tubing leakages or accidents. All-in-all, the ReactoMate reactor and the Condensyn truly allow us to make our green process sustainable”.

ReactoMate ATOM jacketed lab reactors are designed for process chemistries up to 30 Litres. These high-performance lab reactors come with almost endless customisation options to alter vessel dimensions, vessel and lid materials, automation and much more. The Condensyn Waterless Air Condenser range is a proven ‘green’ replacement for water cooled condensers and suitable for greater than 95% of all chemical reflux applications. By not using cooling water the environmental impact of a lab using Condensyn is dramatically reduced, as is the cost of water usage. For further

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information please visit <https://www.asynt.com/product/condensyn-maxi-reflux-condenser/> or contact Asynt on +44-1638-781709 / enquiries@asynt.com.

To watch the full video interview with Revive Eco please visit <https://youtu.be/xbse4gHriWU>

Founded in 2015 by Scott Kennedy and Fergus Moore, Revive Eco offers a waste collection service which diverts coffee grounds from landfill, and processes them to extract maximum value from the material. Working with a local resource management partner, Revive Eco converts the coffee grounds into natural oils which have uses in a range of industries including cosmetics, food, drink, and pharmaceuticals. In 2020, they launched their first small coffee ground processing unit which means they can now collect and convert 2.5 tonnes of coffee grounds per week from Scottish clients. From the residual material, they create a natural soil conditioner, ensuring the process is completely zero waste. The Revive Eco team are currently raising investment funds on Crowdcube to enable the next stage of their development with an opportunity for their community and other like-minded individuals to join them in this exciting journey.

Asynt is a leading supplier of chemistry equipment for scientists in industry and academia. With a sales team of trained chemists, Asynt draw upon their in-depth application knowledge to provide a high-level of customer support for its oil-free DrySyn Heating Blocks, Condensyn waterless condensers, turn-key & bespoke solutions for Controlled Lab Reactors, Flow Chemistry apparatus, Photochemistry systems, Synthesis Tools, Evaporators, Temperature Control Systems, Vacuum Pumps and Lab Safety Equipment plus more.

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Illustrative images:



Caption: Chemists at Revive Eco undertaking large scale extract of a coffee oil from waste coffee grounds



Caption: Co-founders of Revive Eco, Fergus Moore and Scott Kennedy, leading the way in turning waste coffee grounds into a sustainable palm oil alternative

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