# University collaboration develops AI system to enhance carbon dioxide removal



A collaborative effort between academics at the University of Huddersfield and climate tech company Tierra Foods has led to the development of an innovative AI-powered monitoring system designed to enhance carbon dioxide removal (CDR) achieved through forestry practices. Over a period of nine months, the team utilized approximately £690,000 (over $850,000) in project funding to create this advanced monitoring mechanism that integrates various artificial intelligence technologies.

This initiative was facilitated by a significant portion of the funding, amounting to £496,000 (more than $615,000), granted by Innovate UK. This financial support enabled the university's researchers to assemble a dedicated team focused on advancing the project.

Tierra Foods, which is on a mission to assist global food companies in their transition towards sustainable practices, employs a technique known as biomineralization. This process involves converting atmospheric carbon dioxide into a stable form, calcium carbonate, which is subsequently stored in soil with the assistance of specific plant species. For this partnership, Tierra Foods selected English oak trees across various field sites in the UK and plantations of Brosimum Alicastrum (commonly referred to as ramón or uje) located in Mexico.

Marcela Flores, CEO of Tierra Foods, highlighted the project’s advancements by noting the implementation of insights gleaned from both global experts within the company and esteemed academics affiliated with institutions such as the universities of Zurich, Neuchâtel, Merida, and Bournemouth. “The next step is to integrate our findings through software-based technology and put the technology at the service of industry to widen the adoption of nature-based solutions,” Flores stated.

Dr. George Bargiannis, who serves as Deputy Director of the University’s Centre for Autonomous and Intelligent Systems (CAIS) and a member of its School of Computing and Engineering, led this pioneering project. He was supported by Dr. Emmanuel Papadakis and Professor Simon Parkinson. In addressing the outcomes of the collaboration, Dr. Bargiannis remarked, “We created a digital representation of the carbon capture process, including all relevant biogeochemical factors and metrics.”

The research team utilised this digital model, combining it with the data provided by Tierra Foods, to refine machine learning algorithms capable of predicting CO2 capture quantities over specified timeframes. Furthermore, these models were optimised by integrating a broader range of data, enhancing their forecasting capabilities.

This project reflects ongoing trends in the intersection of artificial intelligence and environmental sustainability, demonstrating the potential for advanced technologies to play a pivotal role in addressing pressing global challenges such as climate change.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

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