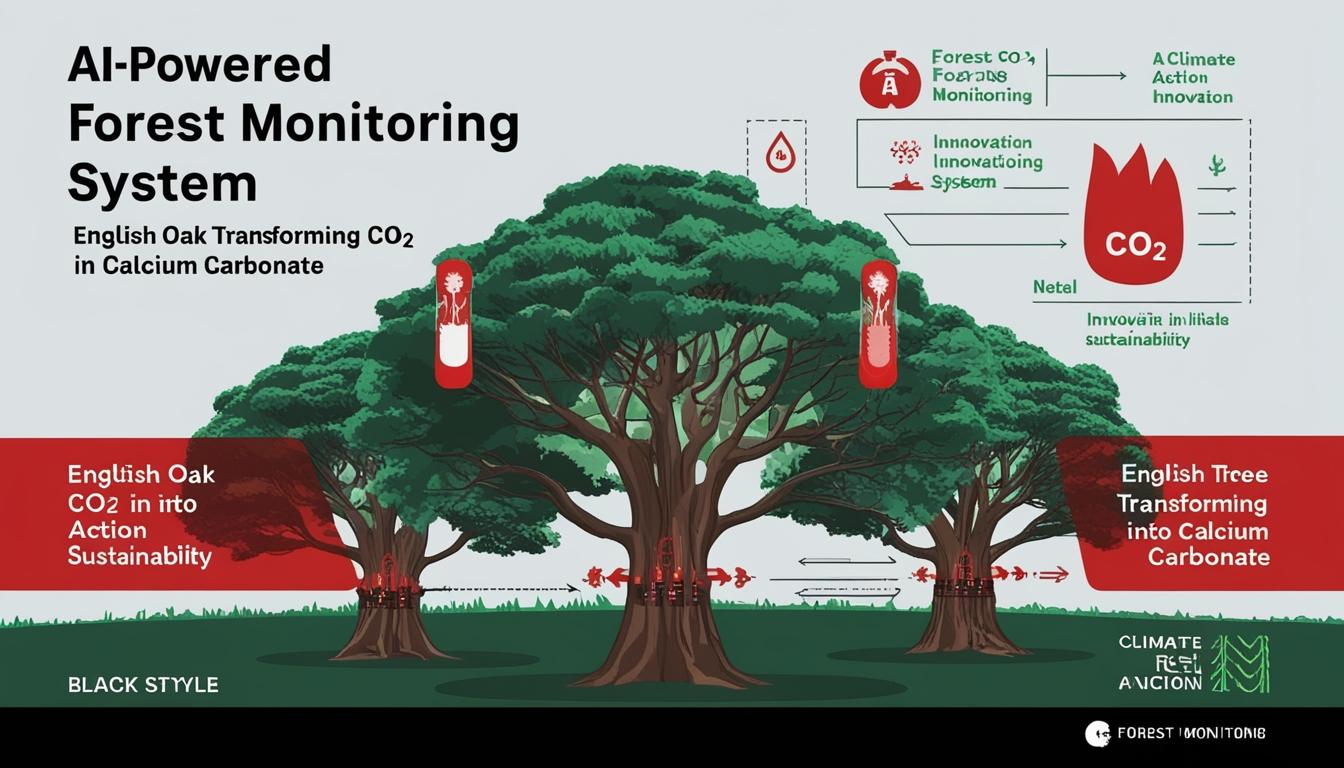
# University collaboration develops AI system to enhance carbon dioxide removal



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

1. <https://www.hud.ac.uk/news/2024/september/academics-ai-driven-carbon-capture-agroforestry/> - Corroborates the collaborative effort between the University of Huddersfield and Tierra Foods, the use of AI for carbon capture monitoring, and the funding from Innovate UK.
2. <https://www.hud.ac.uk/news/2024/september/academics-ai-driven-carbon-capture-agroforestry/> - Details the project's funding, the role of Dr. George Bargiannis, and the involvement of specific plant species like English Oak and Brosimum Alicastrum.
3. <https://www.hud.ac.uk/news/2024/september/academics-ai-driven-carbon-capture-agroforestry/> - Explains the biomineralization process used by Tierra Foods and the integration of global expert insights into the project.
4. <https://www.hud.ac.uk/news/2024/september/academics-ai-driven-carbon-capture-agroforestry/> - Describes the creation of a digital representation of the carbon capture process and the use of machine learning algorithms to predict CO2 capture quantities.
5. <https://www.ukri.org/news/projects-funded-to-stimulate-nature-positive-investment/> - Mentions the funding from Innovate UK for the project involving Tierra Foods and the University of Huddersfield, as part of the nature-positive investment initiatives.
6. <https://www.ukri.org/news/projects-funded-to-stimulate-nature-positive-investment/> - Provides context on the broader initiative to stimulate nature-positive investment through data and AI, including the project with Tierra Foods.
7. <https://www.ukri.org/news/projects-funded-to-stimulate-nature-positive-investment/> - Highlights the role of Innovate UK in supporting projects that integrate finance and biodiversity for a nature-positive future.
8. <https://tierra-foods.com/news> - Corroborates Tierra Foods' focus on biomineralization and their mission to assist global food companies in transitioning to sustainable practices.
9. <https://tierra-foods.com/news> - Provides additional context on Tierra Foods' involvement in climate-focused initiatives and their use of AI-driven monitoring.
10. <https://www.hud.ac.uk/news/2024/september/academics-ai-driven-carbon-capture-agroforestry/> - Details the optimization of machine learning models using a broader range of data, including soil measurements and satellite imagery.
11. <https://www.ukri.org/news/projects-funded-to-stimulate-nature-positive-investment/> - Outlines the timeline and showcase plans for the projects, including the Nature Finance Showcase for Climate Tech Investing in September 2025.
12. <https://carbonherald.com/university-of-huddersfield-and-tierra-foods-partner-on-new-ai-powered-cdr-monitoring/?utm_source=rss&utm_medium=rss&utm_campaign=university-of-huddersfield-and-tierra-foods-partner-on-new-ai-powered-cdr-monitoring> - Please view link - unable to able to access data