Microwaves offer fat chance to probe supermarket food

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Microwaves used for zapping instant meals can also be used to determine the fat and salt content of supermarket food, according to research carried out at two Manchester universities.

One of the research team, PhD student Sing Kwei Ng, has scooped a top industry prize for his work to determine the amount of fat in beef.

His award-winning paper detailing initial results will be presented at the LMC Congress: Innovations in Food Technology conference in Denmark, today (Thursday 20 September 2007).

The Microwave Profiler project is being led by Professor Andrew Gibson from The University of Manchester's Microwave and Communication Group, working with The School of Materials and Professor Paul Ainsworth from the Department of Food and Tourism Management at Manchester Metropolitan University.

The study began after researchers realised that as microwaves heat different types of food at different rates, they must also be sensitive to food content such as water, salt and fat.

The aim of the project is to develop a new fast and non-invasive method of predicting the fat content in meat products.

This type of constant real-time monitoring during the production process could help reduce waste, maximise yield, reduce laboratory testing and

save energy.

Sing Kwei said: “Greater awareness regarding food safety and health issues means that consumers are now more concerned than ever about meat products being safe and fresh with a low fat content.

“Food contents and ingredients now have to be disclosed under the European Union legislation but cannot currently be measured quickly or cost-effectively.

“The meat industry is under extreme pressure to find new cost effective methods of meat quality evaluation at every level of food processing. Knowledge of the fat content of meat products is critical.

“The potential of our system to overcome current technical barriers to practical measuring instruments could significantly impact upon food processing and reprocessing technology.”

The research team has carried out successful pilot studies to determine the fibre content in waste products produced by the brewing industry, the moisture content in wheat grain and the salt content of supermarket food.

But they say more research on the capabilities of microwave sensors in industrial conditions is needed before the method can be properly introduced.

Engineers working on the Microwave Profiler project are hoping to develop robust and portable microwave-based instruments that are capable of taking measurements in industrial or laboratory conditions.

Source: University of Manchester