

Home

About Us

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RSS FEED

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Keyword

SEARCH

> Advanced Search

Win a Book

News

> Breaking news

> Agriculture

> Archaeology

> Atmospheric Science

> Biology

> Cancer

> Chemistry and Physics

> Earth Science

> Education

> Infectious Diseases

> Mathematics

> Medicine & Health

> Nanotechnology

> Oceanography

> Science Business

> Science Policy

> Social & Behavioural

> Space

> Technology

Articles

Blogs and Opinions

Facts

Poems & Quotes

Games & Quizzes

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Earth

Origins

Humans

Nature

Machines

Technology

Space

Mysteries

Big Theories

Ads by Google

Food Recipes

Cooking Courses

Cooking School

Home > News > Agriculture

22 Feb 2012

FirstScience News

Provided by Eurekalert!

University of Granada researchers collaborate in a book on the scientific principles of cooking

- 21 Feb 2012

By University of Granada

The book 'The Kitchen as Laboratory: Reflections on the Science of Food and Cooking,' published by the University of Columbia, was presented on Feb. 17 in New York

A group of University of Granada researchers have participated in the writing of a book published by the University of Columbia, NY, entitled The Kitchen as Laboratory: Reflections on the Science of Food and Cooking, where a scientific approach to cooking is provided. The book was presented on 17th February in New York.

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From the Neuroscientists at Lumosity.com

In this global collaboration of essays, chefs and scientists advance culinary knowledge by testing hypotheses rooted in the physical and chemical properties of food. Using traditional and cutting-edge tools, ingredients, and techniques, these pioneers create dishes that respond to specific desires and serve up an original encounter with gastronomic practice.

The essays that compose The Kitchen as a Laboratory

cover a range of culinary creations and their history and culture from the seemingly mundane to the food fantastic -from grilled cheese sandwiches, pizzas, and soft-boiled eggs to Turkish ice cream, sugarglasses, and jellified beads. They consider the significance of an eater's background and dining atmosphere and the importance of a chef's methods, as well as the strategies used to create a great diversity of foods and dishes. This collection "will delight experts and amateurs alike".

Physics and Chemistry in the Kitchen

As restaurants currently rely more on science-based cooking, chefs increasingly explore the physics and chemistry behind culinary art. Contributors end each essay with their personal thoughts on food, cooking, and science, offering rare insight into a professional's passion for playing with food.

The researchers Julia Maldonado-Valderrama and María José Gálvez Ruiz, at the University of Granada Department of Applied Physics, participated in the completion of the chapter devoted to milk foam, where the technique and ingredients employed to get the perfect foam in a cappuccino are described.

"At present, foam is one of the most useful elements in culinary innovation; therefore, this chapter is very relevant to the contents of this book", the researchers affirm. Their research is focused on the physical and chemical properties of emulsions and foams".

The authors of this chapter describe the scientific foundations of foam by providing an explanation of the structure and basic properties of "this fascinating element in food".

The mathematical foundations of the generation and composition of bubbles are extremely complex. The book states that "If you start the day with a creamy cappuccino and end it with a foamy beer, then your day starts and ends with one of the scientifically most intriguing foods", the book states.

The chapter written by the University of Granada researchers reveals the physical and chemical interactions that give foam its characteristic texture and consistency, thus providing a new insight to this type of structures.

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1/2