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Why does the ice-cream not melt in Baked Alaska? Ever wondered why an egg solidifies under heat? How come a croquette is liquid on the inside and crunchy on the outside? Still not interested in the chemistry of cooking? No?

Whether you are an inspired amateur cook seeking to take your skills to the next level, or an expert chef with considerable knowledge of this area, this book will make you revisit what you already know, and after reading it you will have gained an invaluable insight into why food reacts the way it does to such processes as changes of temperature and of state. Understanding why the different processes of heat transference, radiation (grilling), conduction (e.g. frying), convection (e.g. roasting), affect the micro and macro molecular structure of proteins and carbons and all the other structures that form the basis of foods opens a window on food that is more practical than you might at first think.

As every home economist knows, a little of the science behind the cookery process helps us understand why some recipes work, and why they sometimes fail. It also helps us innovate and experiment. To take one example, a croquette is a liquid which becomes a solid through the application of heat. The crunchy outside becomes a container for the liquid inside, but if they are left to cool too long, the hot liquid inside makes the outer shell soggy. Cookery is about the management of transitional states of energy transferral – it isn't static, and that is why timing is of the essence in many culinary preparations. Naturally, this book focuses on many of the types of confections that have made Ferran Adrià's controversial style of cooking legendary. We learn about the role of air, sponges, emulsions; the transitional properties of solids, liquids and gases; collagens and gelatines. For example, did you ever stop to wonder why an egg, which is a liquid, solidifies with heat? The answer is that heat breaks down the complex molecular structure of the proteins, and this changed state manifests itself as a solid at a different temperature. This is also true of salt, which melts, but only at a temperature of 801 celsius… Sugar, on the other hand, doesn't in fact melt at all…There are also some great recipes, from a simple pear in red wine dessert (which teaches us about spreading colour via conduction), to a mouth-watering chocolate coulant.

This is a book for anyone who is really dedicated to improving their practical cookery skills, as it brings the light of science into the culinary art, and in so doing, provides a number of invaluable insights which can not only improve the way we approach making food, but guides the cook around a myriad of issues such as: are additives unnatural? How does technology alter the food preparation process?

The author of this book is an expert in the field, a professor of chemistry at Barcelona university; written in the form of a witty dialogue between a sceptic and the author, the role of chemistry in cooking is told with elegance, humour