

EGG FUNCTIONALITY IN THE FOOD INDUSTRY

FUNCTIONAL PROPERTIES

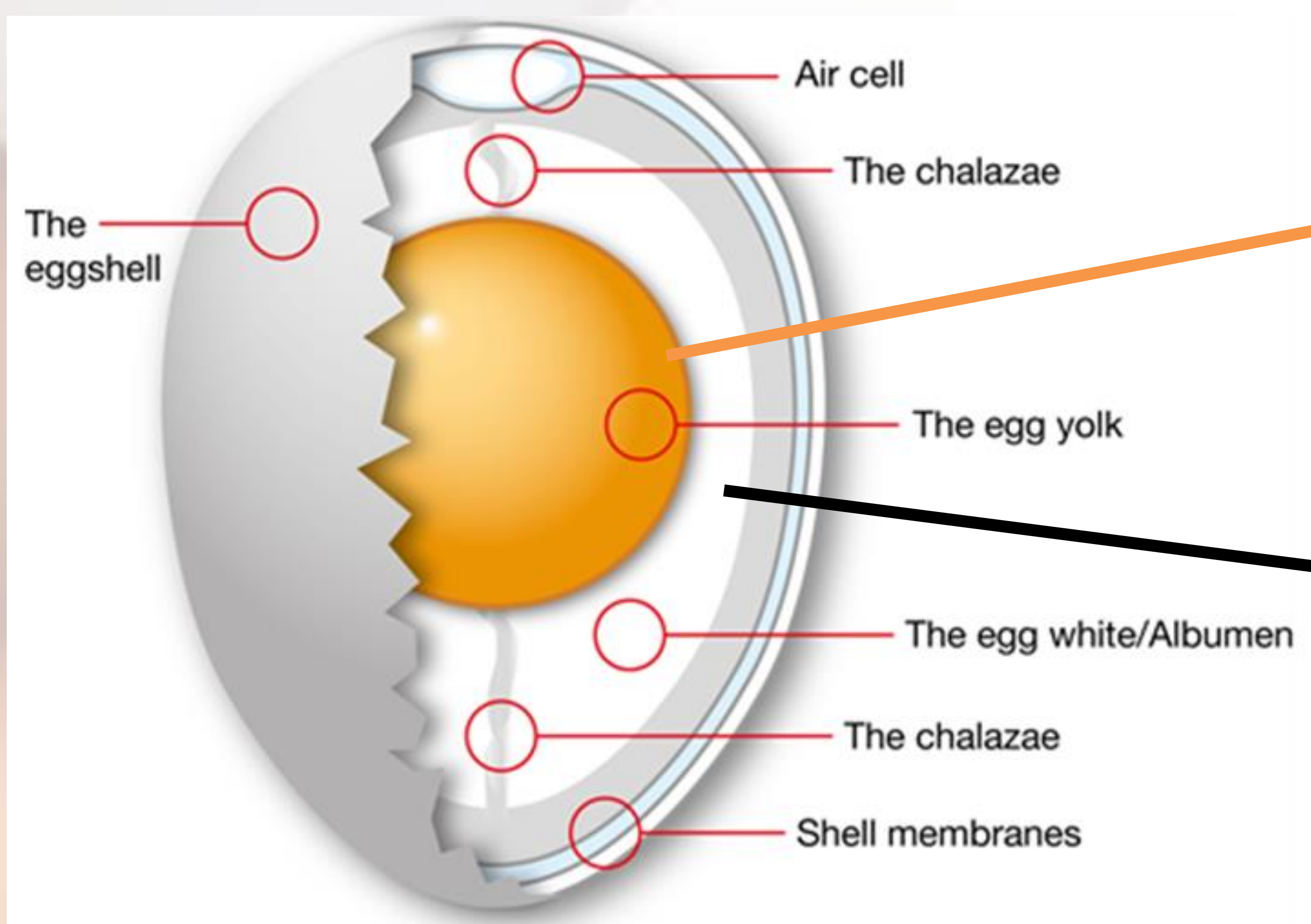
Jaume Escrigas Albó
Food Science and Technology
10 febrer 2016

OBJECTIVES

- Studying the functional properties and chemical composition of hen's egg for their application in the food industry.
- Learning different techniques that can improve functional properties of the different egg components (yolk and albumen).

STRUCTURE OF EGGS

An egg basically consists of three parts



TECNO-FUNCTIONAL PROPERTIES AND APPLICATIONS

Emulsification: mayonnaise, sauces, ice cream
Flavor: crème caramel, sauces
Browning/ colour: bakery products

Coagulation: desserts
Foaming: meringue, mousse, cakes
Adhesion/binding: bakery products
Clarification: broth, wine
Crystallization control: meringue, "torró"

IMPROVEMENTS OF FUNCTIONAL PROPERTIES OF EGG WHITE PROTEIN

- Heating in dry and dry technologies → improvements in the water- holding capacity
- pH induces an unfolding and refolding regime → foaming capacity and stability
- Heat treatment vs. high pressure homogenisation → foaming capacity and stability
- Radiation processing → there are no conclusive results
- Ultraviolet and pulsing light processing → there are no conclusive results

CONCLUSIONS

- It is a versatile product. Being able to use their fractions (albumen and yolk) is very useful for industrial sectors.
- Thanks to their techno-functional properties it has many applications in the food industry.
- There are many studies which want to find the best way to modify the denaturation of egg proteins.