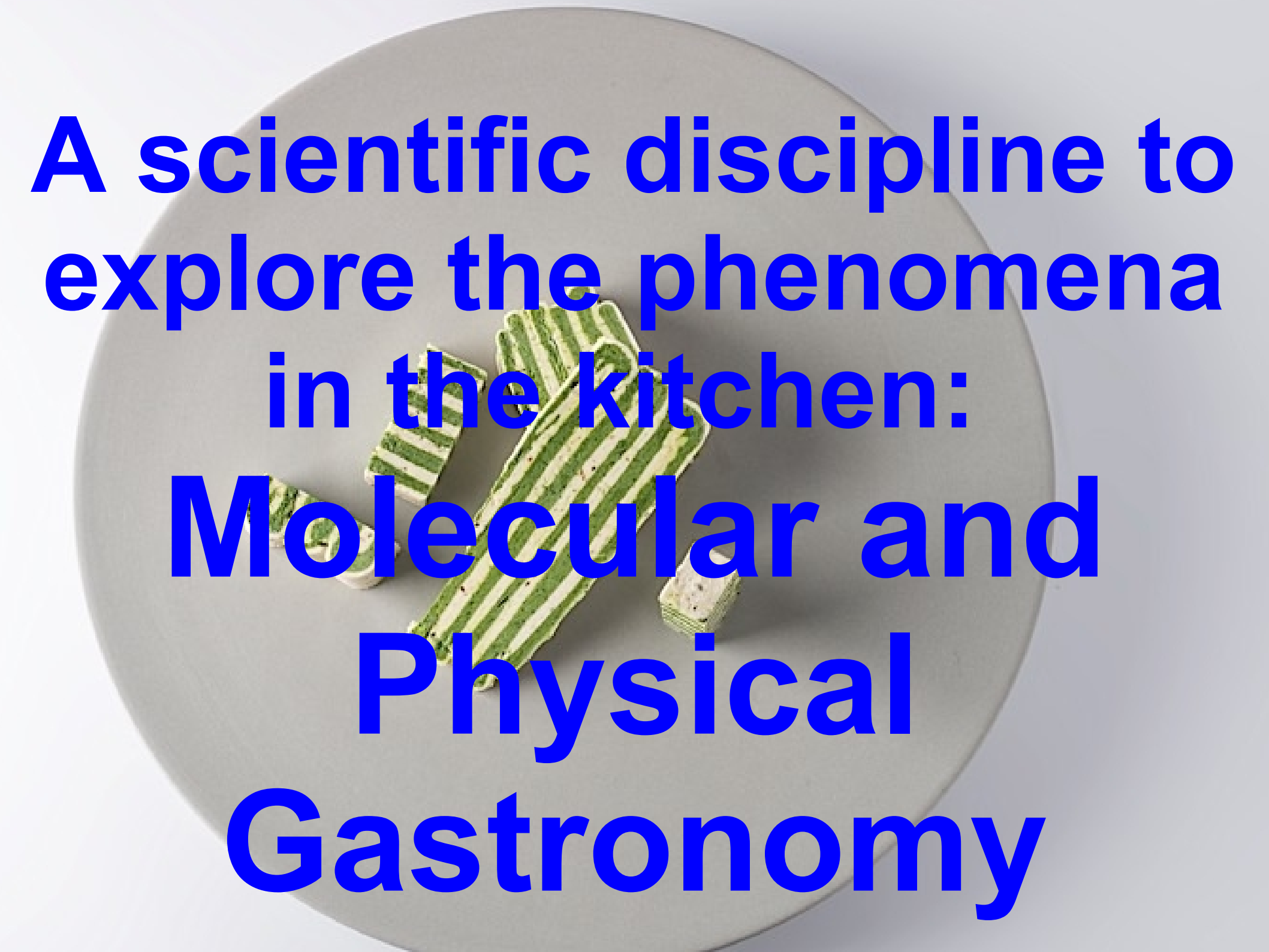

A scientific discipline to explore the phenomena in the kitchen:
Molecular and Physical Gastronomy

1.
Molecular and physical gastronomy is a scientific activity

Sciences explore the mechanisms of phenomena

Francis Bacon (1561-1626)

‘’Every thing to do with natural phenomena, be they bodies or virtues, should (as far as possible) **be set down, counted, weighed, measured and defined**. For we are after works not speculations, and, indeed, a good marriage of Physics and Mathematics begets Practice’’

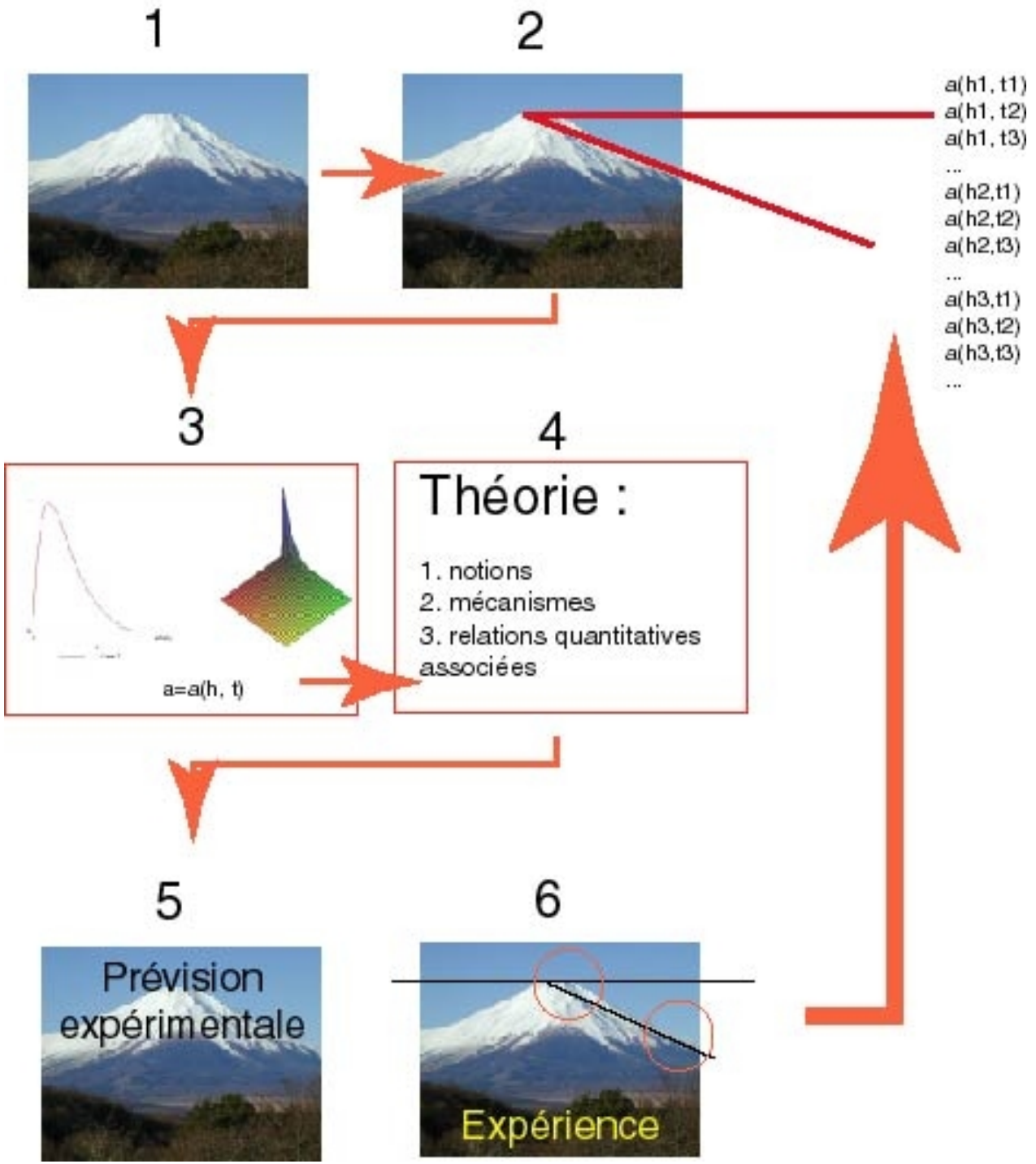
With experiments

- A good way to reach the truth is **to prefer experience to any reasoning,** since we are sure that when reasoning disagrees with experience it contains an error, at least in some hidden form. It is not possible, in fact, for a sensible experience to be contrary to the truth. And this is truly a precept that Aristotle placed very high, and whose force and value far exceed those that should be accorded to the authority of any man in the world.
- Galilée (1564-1642)

And calculation, theories

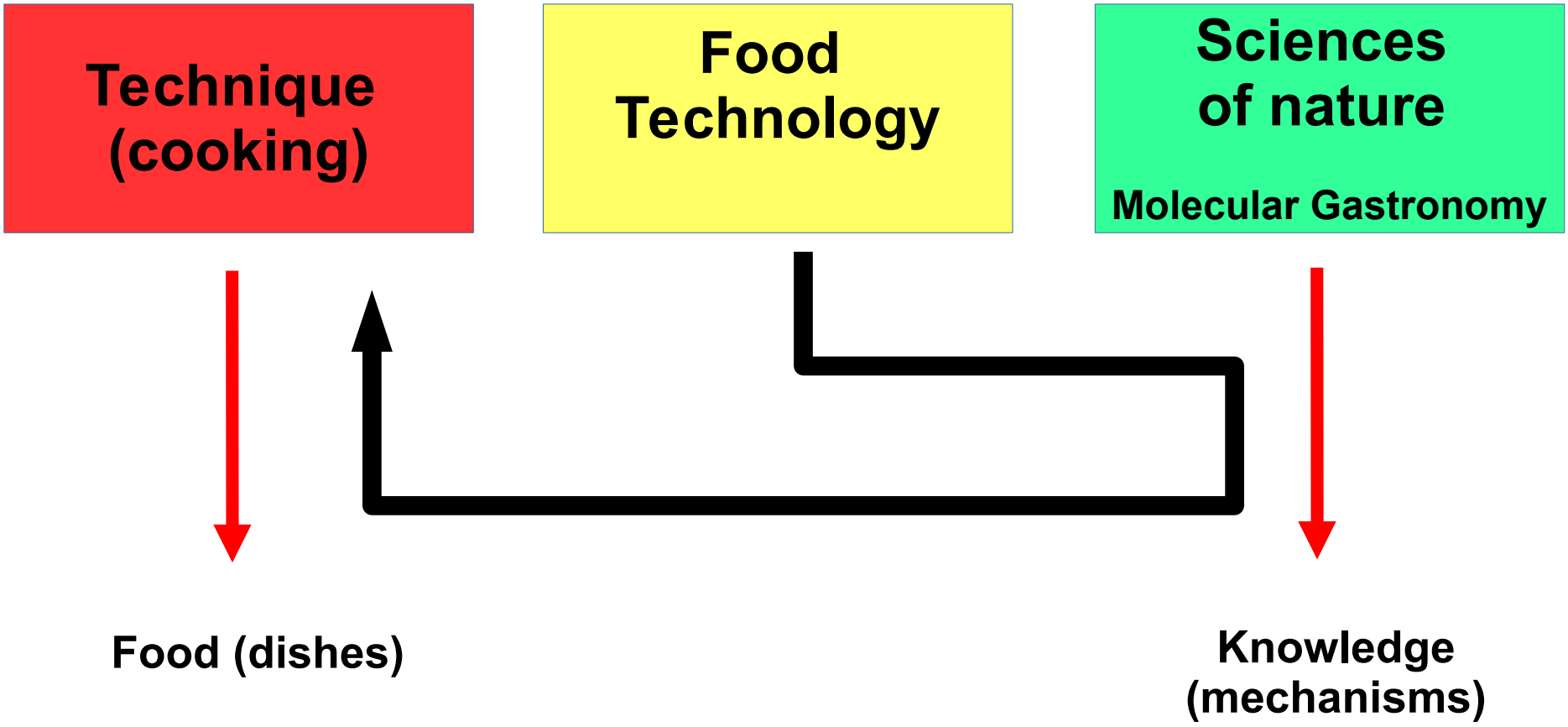
- "Philosophy [nature] is written in that great book which ever is before our eyes -- I mean the universe -- but we cannot understand it if we do not first learn the language and grasp the symbols in which it is written. **The book is written in mathematical language**, and the symbols are triangles, circles and other geometrical figures, without whose help it is impossible to comprehend a single word of it; without which one wanders in vain through a dark labyrinth."

The method of sciences of nature

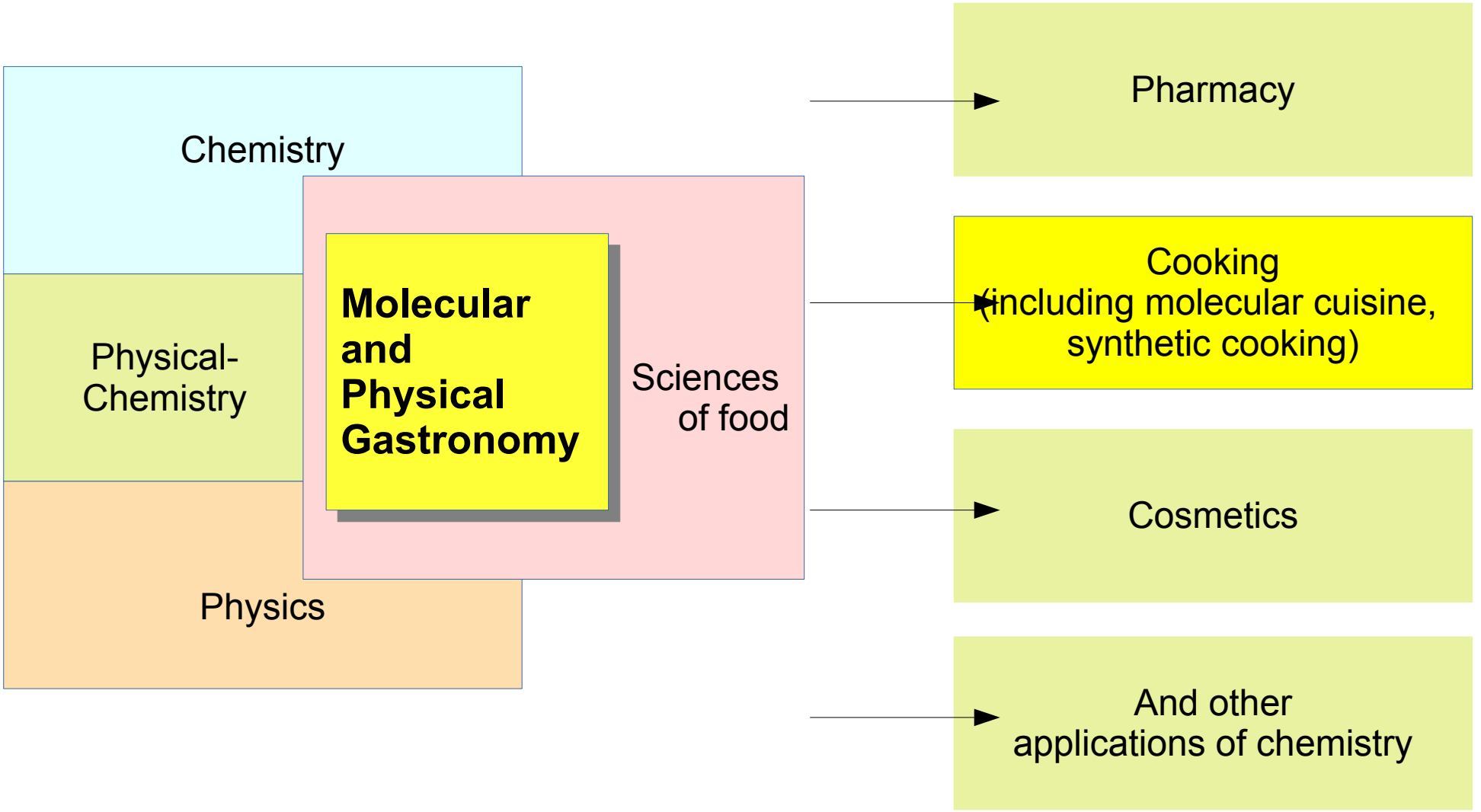


Molecular and Physical Gastronomy : created in 1988

Sciences are have applications



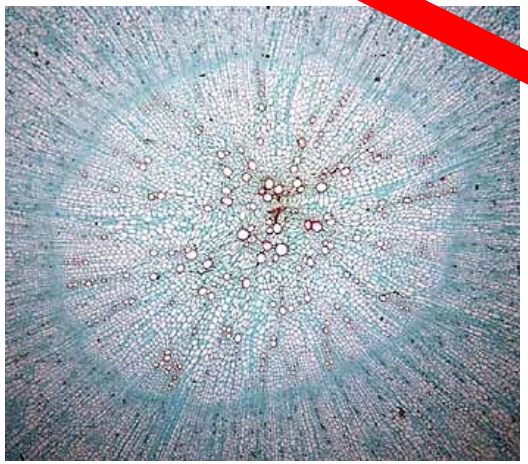
The right place

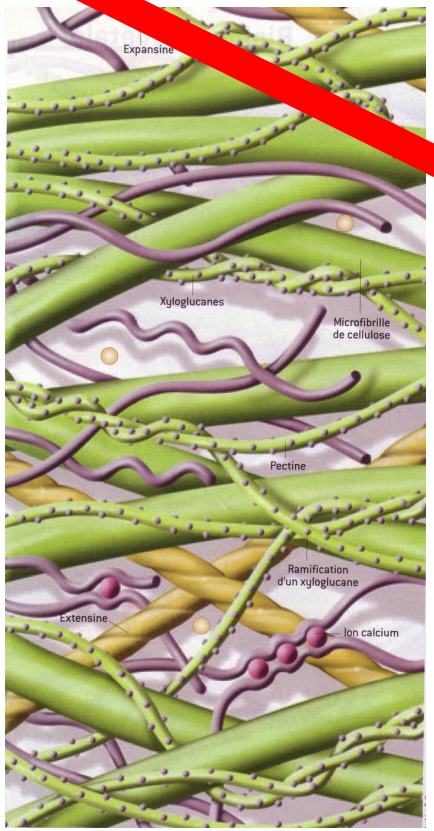


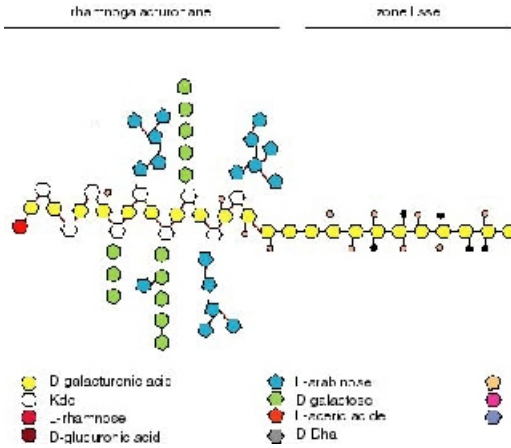
Plenty of phenomena during cooking

Changes in shape, color, taste, odor, etc.

How could we resist?

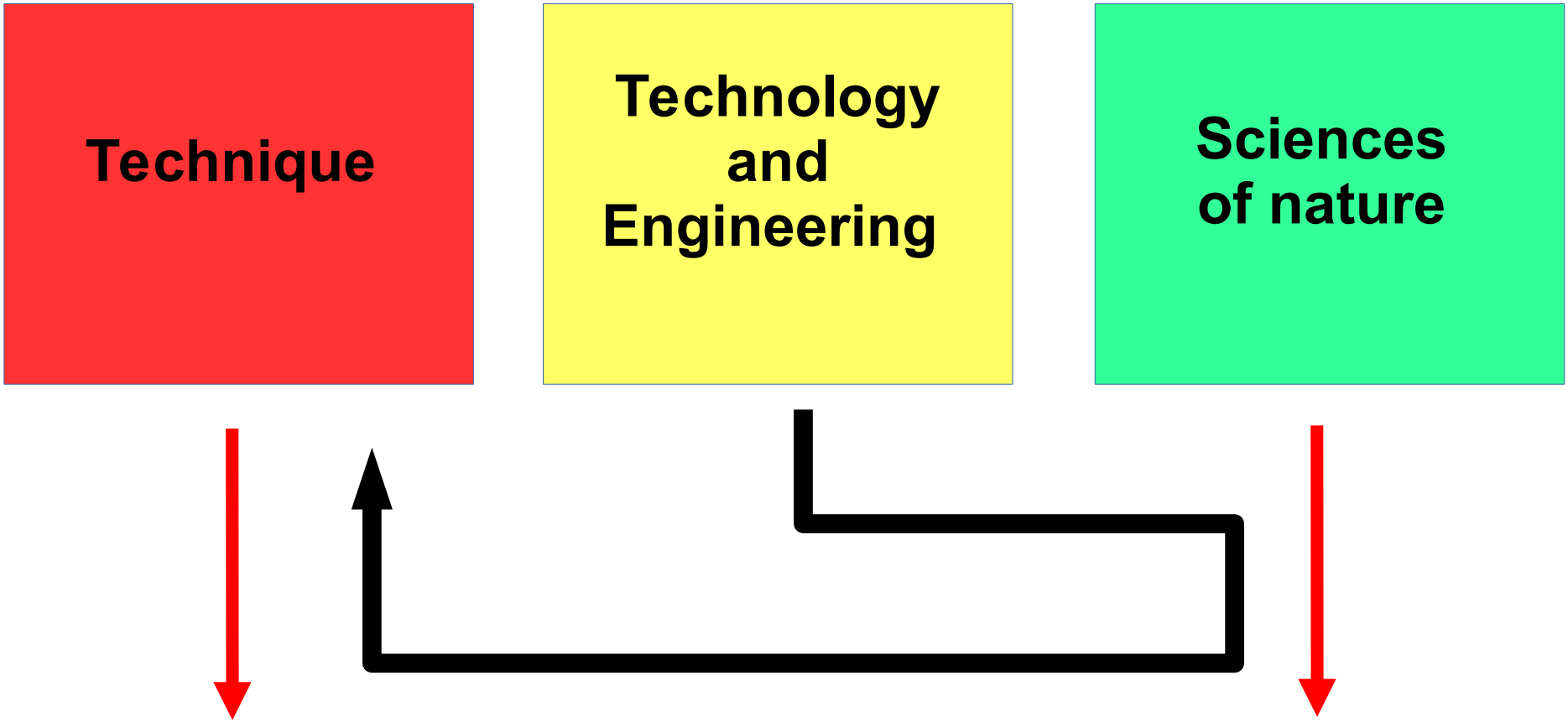




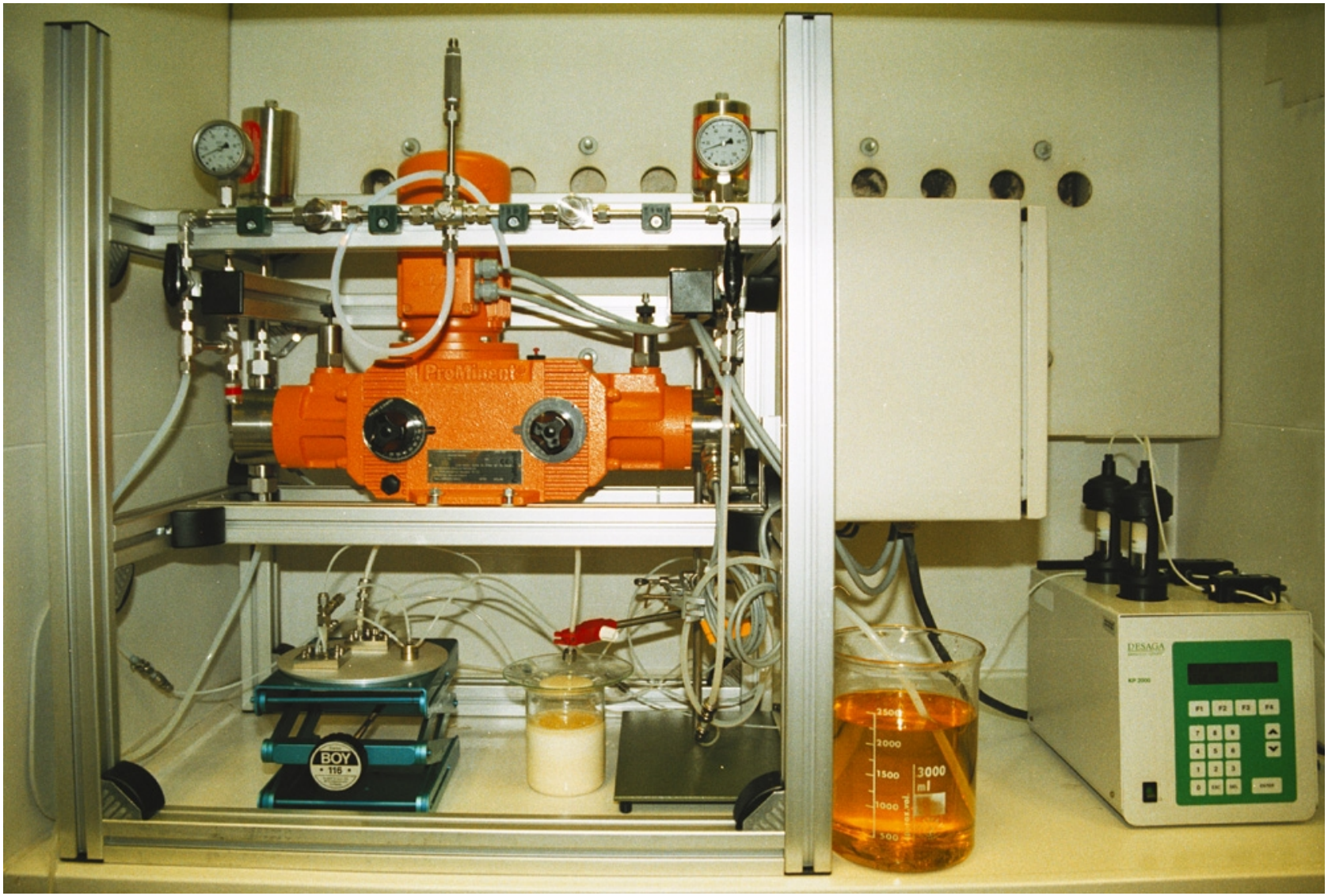


5.
Technical applications

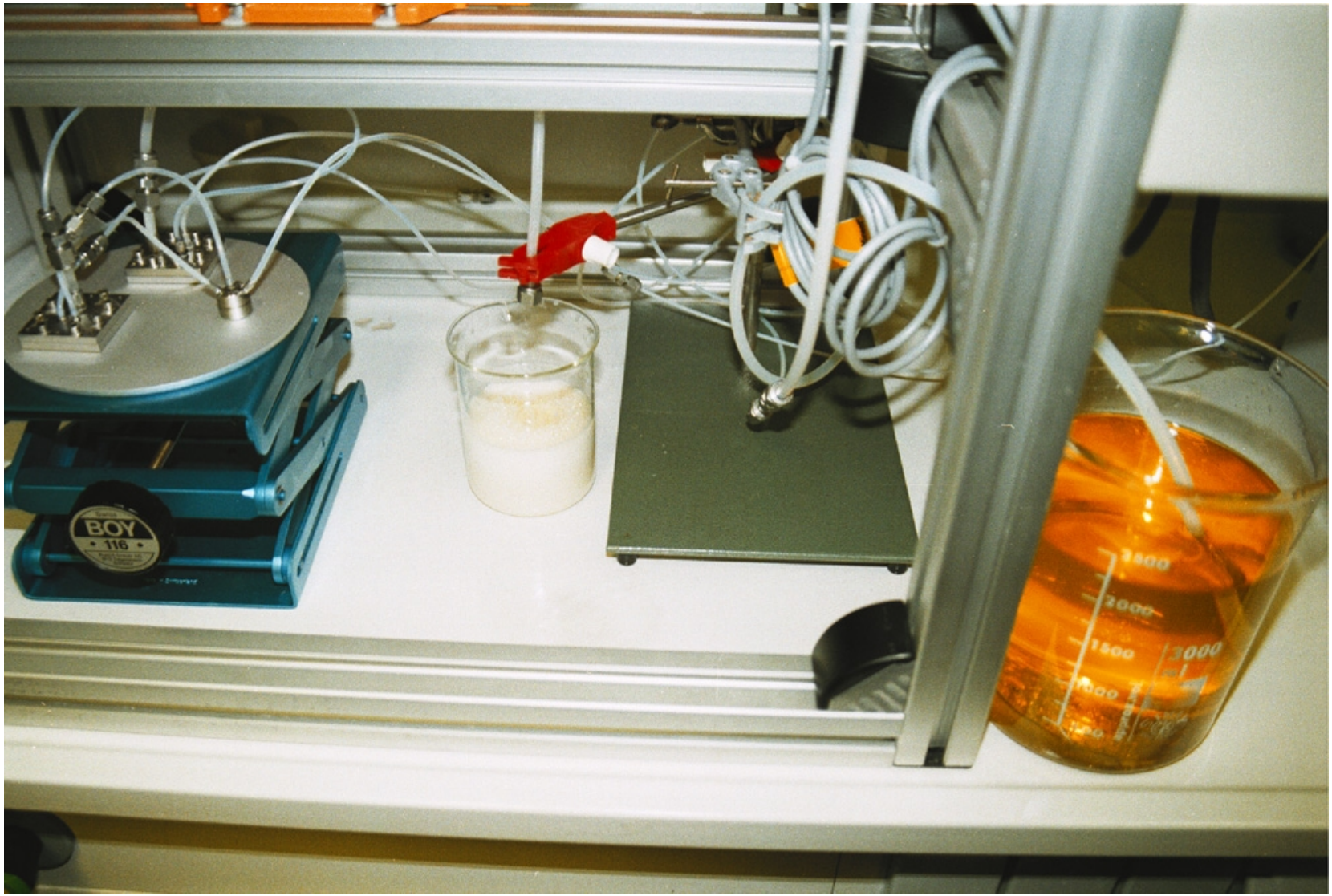
Remember


Technique
Technology and Engineering
Sciences of nature
Artifacts
Improvement of technique
Knowledge (mechanisms)

(2) about technology

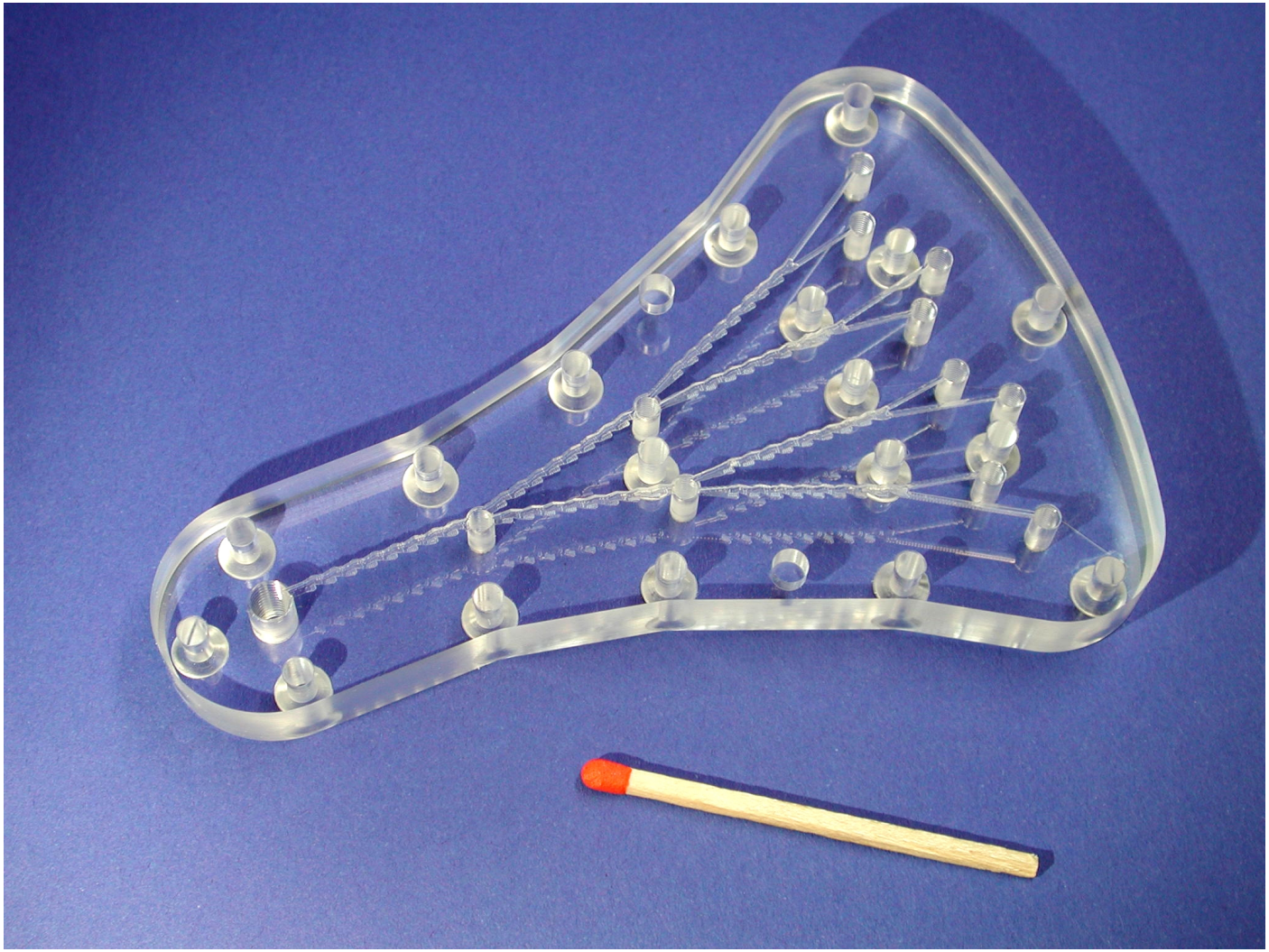


(G + O + S) / W



May 2003, Francfurt : the « pianocktail »

500 billion possibilities



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Using DSF

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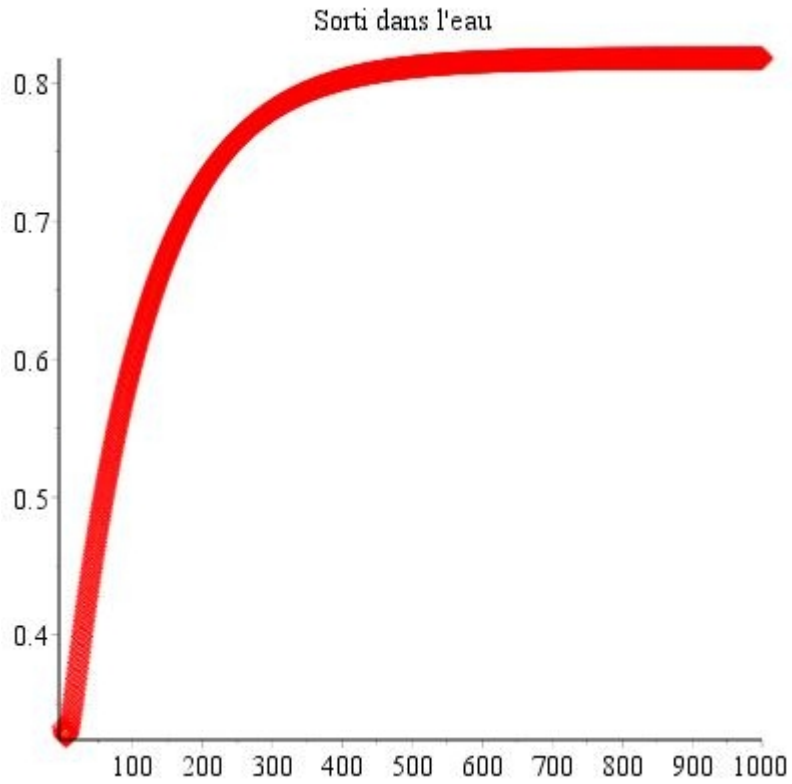
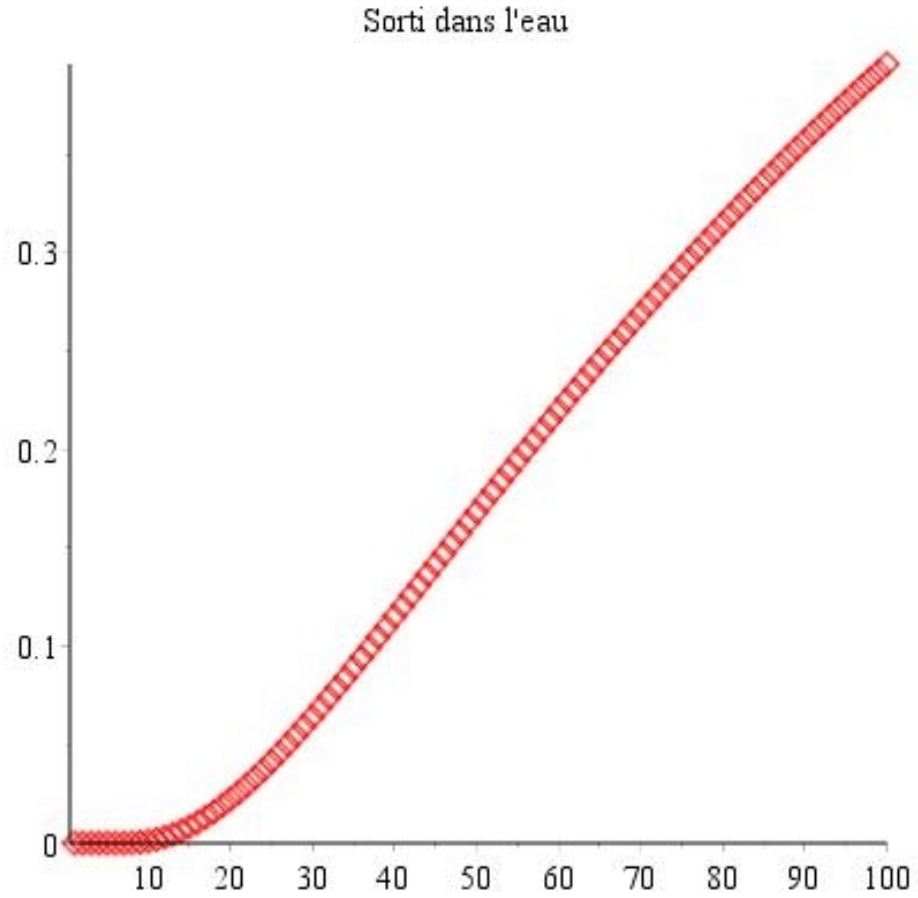
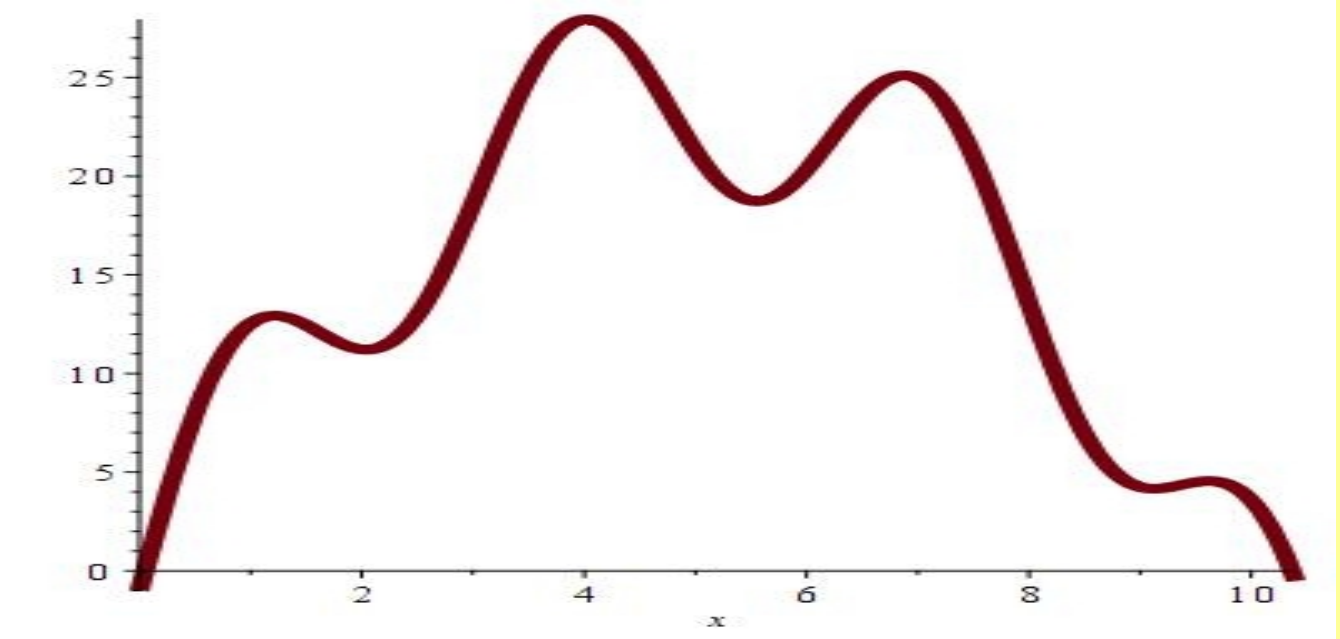
Flavour release





Can we make such a gel ?

Quantité de composé bioactif libérée



temps

Yes

(4)
Molecular cooking, molecular cuisine

New tools from labs

Liebig

Priestley

Würtz

Eggs at 6X °C

Salad à la Nollet

Wind crystals

Gibbs

Chocolate Chantilly

And many others:

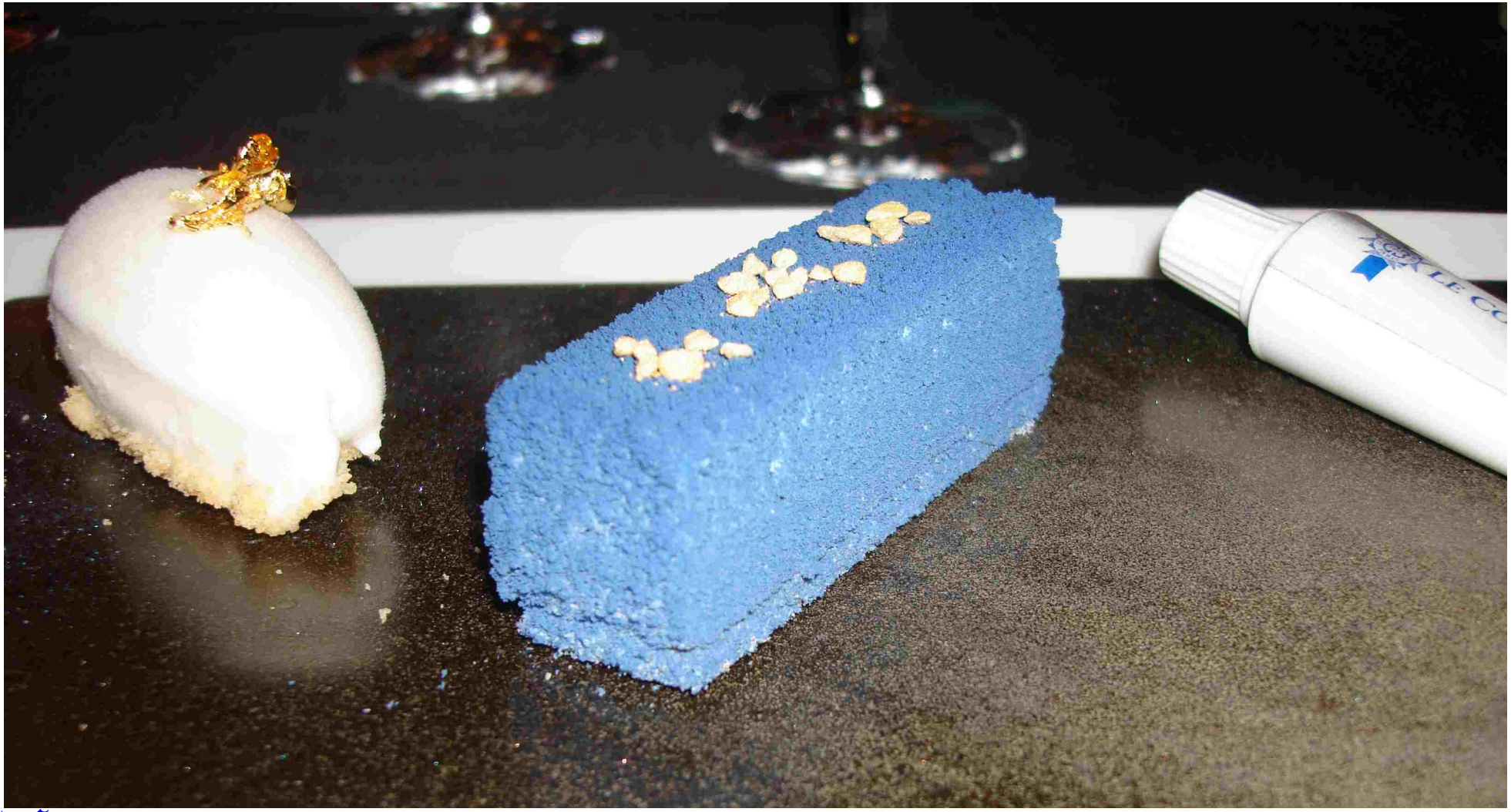
Avogadros, lavoisier, baumé, berzelius, braconnot, cailletets, caventoux, chaptals, chateliers, chevreuls, debyes, descartes, diracs, faradays, ficks, faradays, florys, gay-lussacs, gauss, de gennes, goefroys, gibbs, graham, kesselmeyer, laplaces, liebigs, maillards, mendeleievs, metchnikoffs, nollets, onnes, parés, parmentiers, pasteurs, péliggots, poiseuilles, pravaz, priestleys, quesnays, roux, thenards, vauquelins, wöhler, wurtz, dalton, dumas...

(5)
Much better : synthetic cooking
(« Note by note cooking »)

The idea :
build dishes from compounds

Potel & Chabot, 2011

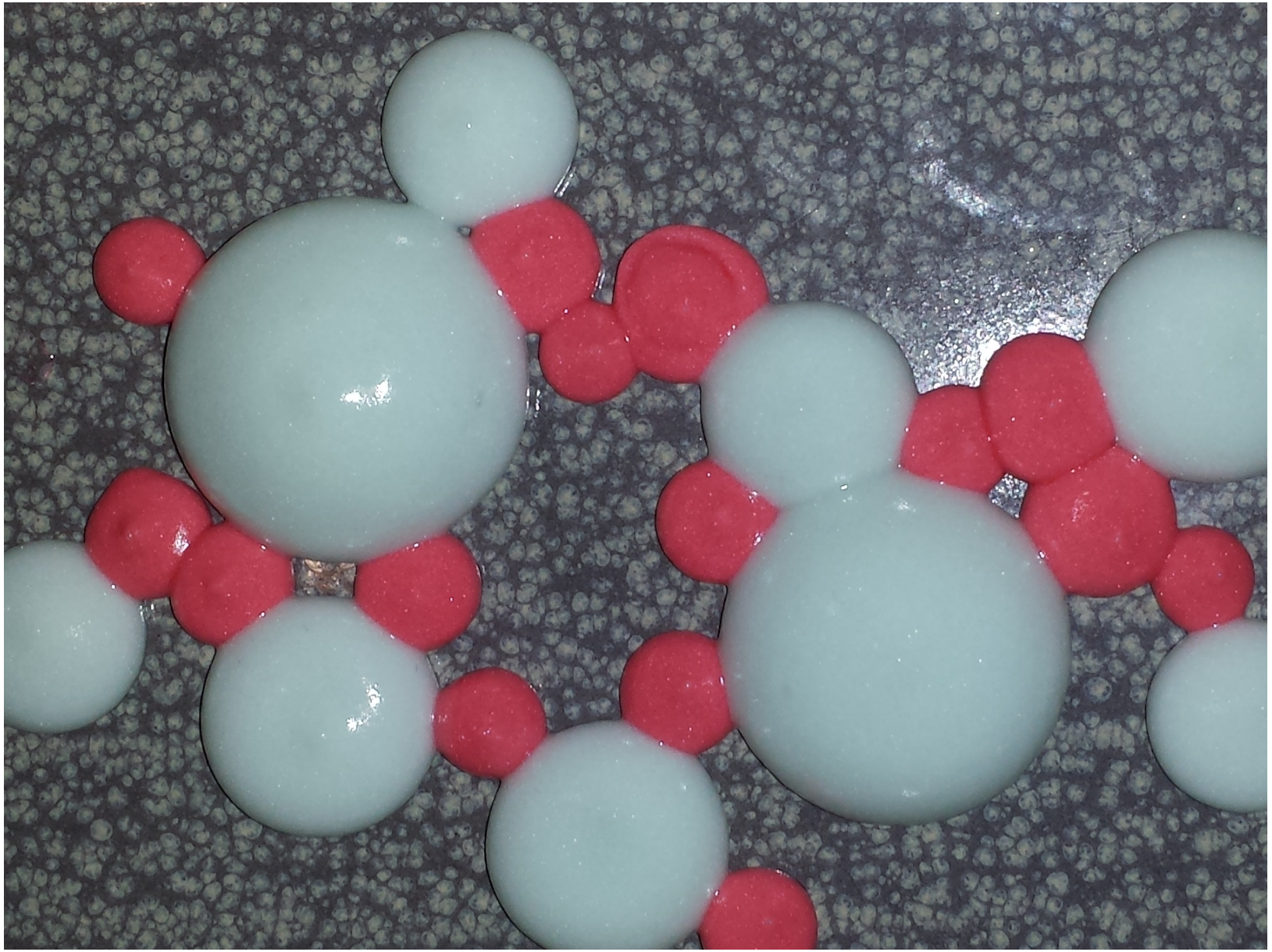
Cordon bleu, Paris, 2012



Montréal (Canada), Avril 2012

HTvK

Aarhus, Danemark, 2017



HTvK

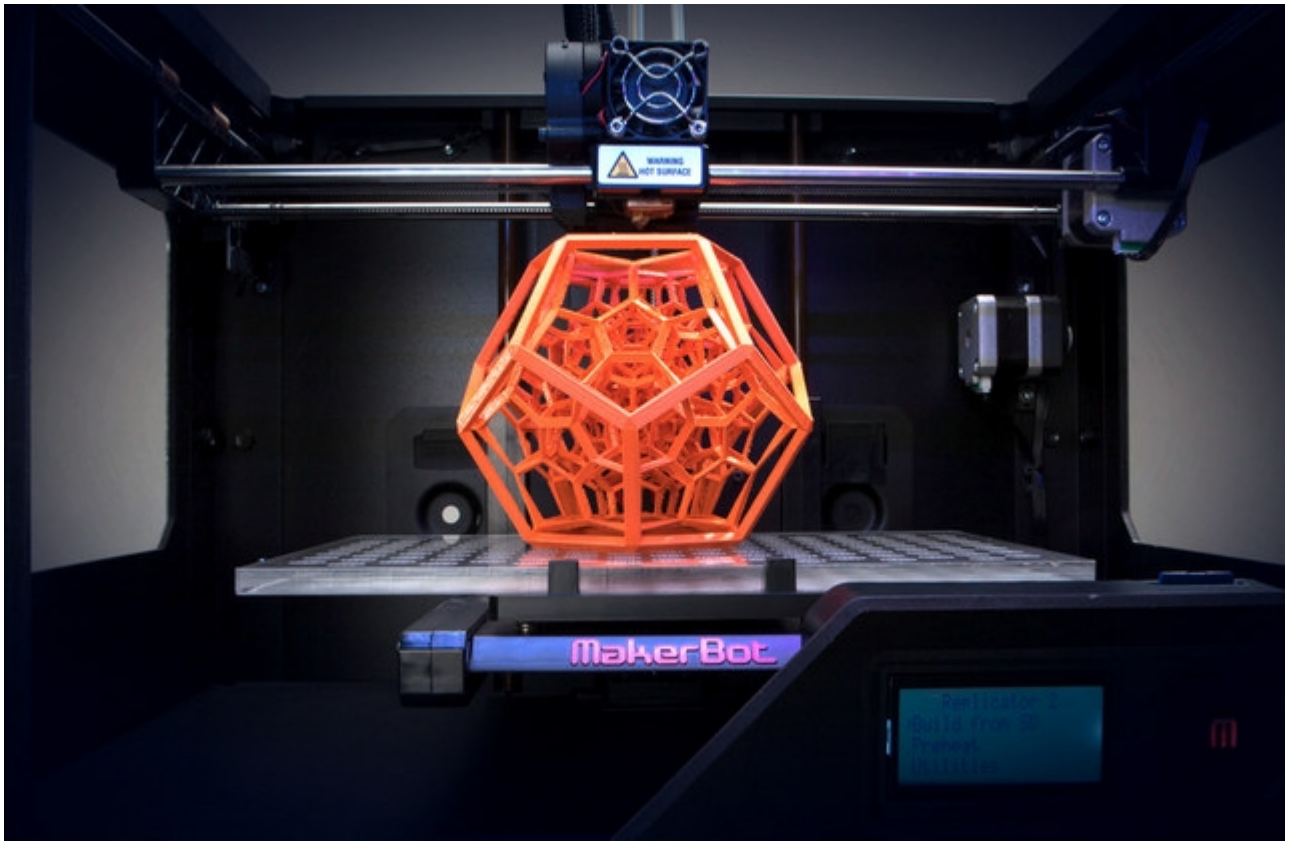
Guillaume Siegler (Cordon Bleu Tokyo), 2019

Andrea Camastra, 2019

Athens, 2018

At-Sunrice, Singapour, 2018

3D food printing



And a scientific journal (open)

International Journal of Molecular and Physical Gastronomy

Partager Transférer Imprimer

The International Journal of Molecular and Physical Gastronomy ("Molecular Gastronomy") is a scientific journal, diamond model, double blind evaluation of the manuscripts, about molecular and physical gastronomy, educational practices and applications to cooking.

The International Journal of Molecular and Physical Gastronomy is a scientific journal, diamond model, double blind evaluation of the manuscripts, about molecular and physical gastronomy
ISSN 2431-0859

It is directed by an **Editorial Board : here**

For **submitting manuscripts**
- use the Instructions to Authors
- send your material at icmg@agroparistech.fr

The journal publishes articles in various sections :

1. **News**
   Short News
   Editorials
   Image for thought (Section Editor: Pr Jose Miguel Aguilera)
   Books reviews and article reviews (Section Editor: Clark Danderson)

2. **Scientific Part**
   Research Notes
   Commentaries (including Commentaries by Reviewers)
   Letters to the Editors (Section Editor: Pr Volker Hessel)
   Reports
   Opinions
   Perspectives
   Litterature Reviews (including Discussions of Culinary Precisions)
   Synthesis
   Debates
   Conference Proceedings

3. **Molecular Gastronomy and Education**
   Courses (Section Editor: Pr Roisin Burke)
   How to do
   Practice and trends
   Educational Developments
   Educational Documents

4. **"Edible Ideas" (applications on molecular and physical gastronomy to cooking)**
   Recipes (Section Editor: Pr Paulina Mata)
   Questions and answers
   Techniques and Tips (Section Editor: Dr Laura Febvay)
   Experimental tests of culinary precisions (Section Editor: Pr Mark Traynor)

All articles can be seen here : articles per year

News. The latest published article:

In the "Recipe" section : Bellot L, Gueguen A, Hong C. 2023. "La Vie en Rose": a note by note savory dish, *International Journal of Molecular and Physical Gastronomy*, 14, 1-8.

ISSN 2431-0859

Celebrate Chemistry !

Herve.this@inrae.fr

HTvK