

International Workshop on Molecular Gastronomy

AgroParisTech, 16 rue Claude Bernard, 75006 Paris (France)

Tel: +33 (0)1 44 08 16 61

email :

icmg@agroparistech.fr

31 May-2 June 2017

8 th Meeting (IWMG 08)

Sponsored by:

AgroParisTech, INRA

Open Questions in Molecular Gastronomy

Director:

Hervé This

International Centre for Molecular Gastronomy.

icmg@agroparistech.fr

Organization Committee:

Pr Roisin Burke (Dublin Institute of Technology, Dublin, Ireland),

Pr Linda Luck (State University of New York at Plattsburgh, USA)

The organizers of the Workshop on behalf of all participants acknowledge with gratitude the generous support of the following firms and organizations: AgroParisTech, INRA

Purpose of the Workshop

« La gastronomie est la connaissance raisonnée de tout ce qui se rapporte à l'homme en tant qu'il se nourrit » (Gastronomy is the reasoned knowledge about man's nourishment)

Jean Anthelme Brillat Savarin (1755-1826)

Writing about the application of the chemistry to the art of cookery:

« In what art or science could improvements be made that could more powerfully contribute to increase the comforts and enjoyments of mankind »

Sir Benjamin Thompson, Count Rumford, (1753-1814)

« Molecular gastronomy is the scientific activity consisting in looking for the mechanisms of phenomena occurring during dishes preparation and consumption

Hervé This and Nicholas Kurti, (1988)

The object of this workshop will be to bring together a group of scientists to discuss collectively the science behind the practices carried out in the kitchen.

Previous workshops have been held on the role of emulsions, the effects of cooking methods on food quality and the management of food flavours. The 8th IWMG « N. Kurti » will focus on “Open questions in Molecular Gastronomy”.

The above quotations from the writings of two founders of culinary science express in a nutshell the spirit and the objectives of the Workshop: the emphasis will be on gastronomy rather than nutrition, on domestic and restaurant cooking rather than industry.

May we also point out that, as the name IWMG « N. Kurti » indicates, this is a workshop and that participants are encouraged to make use of the laboratory (near the lecture room) which is reasonably well provided with both culinary and scientific equipment.

In memoriam Nicholas Kurti (1908-1998)

Nicholas Kurti was born in Budapest (Hungary), 14 May 1908, and educated there in the same Gymnasium as Edward Teller and other famous scientists... Typical of his early years in Budapest was his desire to study music. But as a result of anti-Jewish laws, he had to study in Paris first and then in Berlin. There he worked for a doctorate under Franz Eugen Simon. The two men became close collaborators, but -both being Jewish- they prudently decamped upon the rise of Hitler, finding refuge at the Clarendon Laboratory in Oxford (1933-1940).

There they followed their research in magnetism and low temperature physics, but, at the outbreak of war, they worked on the atomic bomb project (they were not regarded as sufficiently secure to participate to radar studies). Back at the Clarendon in 1945, Nicholas Kurti and Simon used magnetism to obtain the lowest possible temperatures. They invented the nuclear adiabatic demagnetization method in 1956.

Nicholas Kurti did not stand at that point. As he was rising to professorship of physics in Oxford, to fellowship of Brasenose College (he was also visiting professor in many universities all around the world, member or head of more than 20 scientific committees or organization, where he brought his clear point of view), he worked on history of science, science policy, applications of thermodynamics to energy. Obviously he received many honours appropriate to such a tremendous amount of work and care: he was member of a dozen academies and he got prizes as the Holweck Prize (British and French Physical Societies), the Fritz London Award, the Hughes Medal...

Then, after the 1970's, he became interested in what was later called Molecular Gastronomy

He never gave explicit advices. Except one : « *Let us have simple experiments* ».

« *It is a sad reflection that we know better the temperature inside the stars than inside a soufflé* ».
(Nicholas Kurti)

Time table

Tuesday May 30th

Arrival in Paris by 18.00h at the latest (if possible).
Possibility of dinner together near AgroParisTech.

Wednesday May 31st

Welcome coffee/tea

9.00h, Room 30, AgroParisTech, 16 rue Claude Bernard, 75005 Paris

Opening session and Session 1

9.30: Introduction, by Hervé This : In memoriam Nicholas Kurti

10.00-12.00: Latest national and international developments in Molecular Gastronomy (including a project of Handbook)

12.00-14.00: Champagne and Lunch nearby.

Session 2

14.00h-15.00h: Group discussion on future developments in MG education. Possibilities for collaboration in programme/module development, writing papers, project proposals, decision about proceedings, etc.

including :

Molecular Gastronomy Education: Transferring Knowledge and Stimulating Creativity, by Róisín Burke and Pauline Danaher
(oral)

15.00-15.30 : Coffee/tea break

15.30-17.00: Continuation of the group discussion. Recording and dissemination of outcomes

Champagne and All together dinner

Thursday June 1st

Session 3

09.00h : Welcome Tea/Coffee

09.30h-10.30h: Open Questions of Research, strategy for research (open discussion)

including :

- ▶ Tailoring the texture of protein-starch matrices , by Anaïs Lavoisier, Mariel Farfán and José Miguel Aguilera (oral)
- ▶ The exploration of the bioactivity of dynagels, by Hervé This, vo Kientza (oral)

10.30-11.00: *Coffee break*

11.00-12.00: Continuation of the discussion

13.00-15.00 : *Champagne and Lunch*

Session 4 :

14.00h-15.00h : Group discussion on future developments in MG research. Possibilities for collaboration e.g. development of project proposals, proposal for a Summer School

15.00h-15.30h Coffee/Tea

15.30h-17.00h :

Continuation of group discussion. Recording and dissemination of outcomes from the afternoon

19.30: Champagne and All together dinner,

Friday June 2nd

Session 5 :

09.15h-12.30h: Development in Molecular Gastronomy Applications : Molecular Cooking/Cuisine and Note by Note Cooking/Cuisine.

10.30h-11.00h : *Coffee break*

11.00h-12.00h: Conclusion and perspectives

12.00h-14.00h : Champagne and Lunch

The Final Event of the 5th International Contest for Note by Note Cooking will take place in the afternoon, from 2.30 PM to 6PM, in Amphitheater Risler, at AgroParisTech.

A list of hotels nearby

https://www.tripadvisor.ie/HotelsNear-g187147-d7887423-AgroParisTech-Paris_Ile_de_France.html

I stayed in Hotel Serotel Lutece before which was very close by and good but maybe slightly more expensive.

https://www.tripadvisor.ie/Hotel_Review-g187147-d198059-Reviews-Hotel_Serotel_Lutece-Paris_Ile_de_France.html

List of participants:

Altomonte Pasquale (Mr)

KITCHEN LAB.

23 chemin de la Tour

1217 Meyrin-Village

Genève, Suisse

[0041 78 711 25 11](tel:0041787112511)

kitchennalboratory@gmail.com

Aguilera José Miguel (Pr.)

Departamento de Ingeniería Química y Bioprocesos, Escuela de Ingeniería, Universidad Católica de Chile (Chile)

Tel: (562) 354-4254; Fax: (562) 354-5803

jmaguile@ing.puc.cl

Barbar Reine (Pr)

Université de Kaslik, Liban

email : reine.barbar@supagro.fr

Baudevin Jeanne (Ms)

Group of Molecular Gastronomy

16 rue Claude Bernard, 75005 Paris, France

t : +33 1 44 08 17 26

E: jeanne.baudevin@live.fr

Burke, Róisín (Dr.)

School of Culinary Arts and Food Technology | Scoil Na Ealaíona Cócaireachta Bia agus Teicneolaíocht, Dublin Institute of Technology | Institiúid Teicneolaíochta Átha Cliath

Cathal Brugha Street | Sráid Chathal Brugha

Dublin 1 | Baile Átha Cliath 1, Ireland | Éire

T: [+353 1 4024346](tel:+35314024346) ; F: [+353 1 4024497](tel:+35314024497) ;

E: roisin.burke@dit.ie

Cossuta Daniel,

Bunge SA

Koninklijke Bunge B.V.

221 rue de la loi – 1040 Bruxelles, Belgique

Telephone: +32 2 235 05 48

Mobile: +32 472 878 406

Email: Daniel.Cossuta@bunge.com

Febvay Laura (doctorante)

INRA/AgroParis Tech International Centre for Molecular Gastronomy, AgroParisTech, 16 rue Claude Bernard, 75005 Paris (France).

Aérial, rue Laurent Fries, 67400 Illkirch-Graffenstaden

Tel: +33 6 26 38 48 27;

email: febvay.laura@gmail.com

Feore Marie Claude (Mrs)

Group of Molecular Gastronomy

16 rue Claude Bernard, 75005 Paris, France

t : +33 1 44 08 17 26

E: feore@orange.fr

Fort Laure (Mrs)

Group of Molecular Gastronomy

16 rue Claude Bernard, 75005 Paris, France

t : +33 1 44 08 17 26

E: laure.fort@wanadoo.fr

Godaux Marine,

AgroParisTech,

16 rue Claude Bernard, 75005 Paris, France

marine.godaux@agroparistech.fr

Hasic, Sasa (chef)

Molecular Gastronomy Croatia

Slavise Vajnera Cice 16, 51000, Rijeka, Croatia

Mobile : 00385 91 505 79 67

sasa.hasic02@gmail.com

Keršienė, Milda (Assoc. Pr)

Department of Food Science and Technology
Kaunas University of Technology
Radvilenu pl. 19, LT-50254, Kaunas, Lithuania
Tel.: +37067523721

milda.kersiene@ktu.lt

Kozakiewicz Elzbieta,

Bunge SA

Koninklijke Bunge B.V.
221 rue de la loi – 1040 Bruxelles, Belgique
Telephone: +32 2 235 05 48
Mobile: +32 472 878 406
Email: elzbieta.kozakiewicz@bunge.com

Kitryte Vaida (Pr, Dr)

Department of Food Science and Technology
Kaunas University of Technology
Radvilenu pl. 19, LT-50254, Kaunas, Lithuania
Tel.: +37067523721

vaida.kitryte@ktu.lt

Lavelle, Christophe (PhD)

CNRS - National Museum of Natural History - Sorbonne Universities
43 rue Cuvier, 75005 Paris (FRANCE)
Tel: [+33 624 714 403](tel:+33624714403) /
Email: christophe.lavelle@mnhn.fr

Lavoisier Anaïs (doctorant)

Departament of Chemical and Bioprocess Engineering, School of Engineering, Universidad Católica de Chile (Chile)
Tel: (562) 354-4254; Fax: (562) 354-5803
alavoisier1@ing.puc.cl

Luck Linda (Pr)

State University of New York at Plattsburgh
213 Hudson Hall
Plattsburgh, New York USA 12901
Telephone 1-518-572-1839
email luckla@plattsburgh.edu

Moreira da Silva, Aida (Dr.)

Polytechnic of Coimbra - College of Agriculture | Escola Superior Agrária do Politécnico de Coimbra,
R&D Unit - Molecular Physical-Chemistry, University of Coimbra | Universidade de Coimbra, Unidade I&D Química-Física Molecular
Bencanta
3045-601 Coimbra | Portugal
T: +351 968 031 431;
E: aidams@esac.pt

Manojlovic Bojana (Mrs)

Slavise vajnera cice 16
Croatia
51000 Rijeka
sasa.hasic02@gmail.com

Nguyen Dao

KITCHEN LAB.
23 chemin de la Tour
1217 Meyrin-Village
Genève, Suisse
0041 78 711 25 11
kitchennalboratory@gmail.com

Pontif Michael (Mr)

Iqemus Inc
www.iqemus.com
T : +33 6 79 70 66 29
E : michael.pontif@iqemus.com

Reynal, Béatrice de (PhD Nutrition)
NutriMarketing
132 avenue de Villiers, 75017 Paris (France)
Tel: [+33 1 47 63 06 37](tel:+33147630637)
email: beatrice@nutrimarketing.fr
<http://miammiamnutrition.blog.lemonde.fr/>
www.nutrimarketing.eu

Rigault, Yolanda
Biochimiste, Ex-CEA
48 allée de la Blancharde, 91190 Gif sur Yvette
Yolanda.rigault@wanadoo.fr
0670376130

Schmauch Grégory (Dr)
Cooking Research
RATIONAL F&E GmbH
Iglinger Straße 62
86899 Landsberg am Lech
Germany
+49 8191 327 508
g.schmauch@rational-online.com

This Hervé (Pr)
INRA/AgroParis Tech International Centre for Molecular Gastronomy, AgroParisTech, 16 rue
Claude Bernard, 75005 Paris (France).
Tel: +33 1 44 08 72 90;
email: herve.this@paris.inra.fr

Vincent Mathilde (Ms)
Group of Molecular Gastronomy
16 rue Claude Bernard, 75005 Paris, France
t : +33 1 44 08 17 26
E: m.vincent85@orange.fr

Vlasta Pilizota
Josip Juraj Strossmayer University of Osijek
Faculty of Food Technology Osijek

Department for Food Technologies
Franje Kuhača 20
31000 Osijek – HR CROATIA
Tel. : 385 31 224 300 and 385 31 224 311
. Cell: 385 98 560 206
Fax.: 385 31 207 115
E-address: Vlasta.Pilizota@ptfos.hr

Vodnar, Dan Christian, PhD, habil., Lecturer
Vice-rector for Research
Department of Food Science
University of Agricultural Sciences and Veterinary Medicine
400372 Cluj-Napoca, Romania
Mobile: +40747341881
Fax: +40364815110
E-mail: dan.vodnar@usamvcluj.ro or vodnar_dan@yahoo.co.uk
Website: <http://danvodnar.objectis.net/>

Weon-Sun Shin, Ph.D.
Professor
Dept of Food & Nutrition
College of Human Ecology
Hanyang University
[+82 2 2220 1204](tel:+82222201204)(Office)
[+82 2 2220 4204](tel:+8222204204)(Lab)
[+33 6 82 05 31 43](tel:+33682053143)(Mobile in PARIS)
hime@hanyang.ac.kr
www.hanyang.ac.kr

List of accepted oral and written presentation

1. Gastronomic Engineering Unit, Department of Chemical and Bioprocess Engineering

P. Universidad Católica de Chile

Vicuña Mackenna 4860, Santiago, Chile

jmaguile@ing.puc.cl

Abstract

Matrix design is of major importance in note-by-note cooking. At the same time proteins and starches are the main structure-forming food biopolymers. Gelled matrices of whey protein isolate (WPI) encasing native potato starch (NPS) were obtained by the cold gelation process. These matrices were then subjected to heating in water at 55°C (below the gelatinization temperature of NPS), 70°C (after gelatinization of NPS) and 98°C (above the thermal gelation of WPI). Mechanical properties of matrices were evaluated in a texturemeter. Thereafter the matrices were used in two culinary applications: as a fried egg analog and a sweet dessert.

2.

Molecular Gastronomy Education: Transferring Knowledge and Stimulating Creativity

Róisín Burke and Pauline Danaher

Abstract

A relatively new sub-discipline of Food Science, namely Molecular Gastronomy (MG), was created in 1988 by Nicholas Kurti and Hervé This. Many countries around the world have established Molecular Gastronomy educational modules or full programmes. A variety of teaching and learning approaches are used e.g. projects, online lectures, reflective diaries, theoretical development and oral and problem based learning.

Since 2009 Molecular Gastronomy modules have been offered at undergraduate and at postgraduate levels in the Dublin Institute of Technology in Ireland. The implementation of pedagogical strategies will be discussed. These will include development of curricula, methods of assessment and evaluation (of participants and by participants).