

International Workshop on Molecular and Physical Gastronomy

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

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

email :

icmg@agroparistech.fr

4-7 June 2019

9 th Meeting (IWMG 09)

Organized by the *AgroParisTech-INRA International Centre for Molecular Gastronomy*

Flavour through cooking

Director: Hervé This

Organization Committee:

Pr Roisin Burke (Dublin Institute of Technology, Dublin, Ireland), Pr Hervé This (AgroParisTech-Inra), Pr Dan Vodnar (University of Cluj-Napoca, Romania)

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 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 (i.e. knowledge) rather than nutrition, on domestic and restaurant cooking rather than industry.

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, what was called “molecular and physical gastronomy” in 1988.

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 9th IWMG will focus on “Flavour through cooking”.

May we also point out that, as the name IWMG 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 Hervé This and himself called Molecular Gastronomy (1988).

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)

Schedule

Tuesday June 4th

Arrival in Paris by 18.00h at the latest (if possible).

Cremant gathering at AgroParisTech (Hervé This office)

Possibility of dinner together near AgroParisTech.

Wednesday June 5th

Welcome coffee/tea 9.00h, Room 30, AgroParisTech, 16 rue Claude Bernard, 75005 Paris

Participants can fix their posters.

9.30h: Opening session

In memoriam Nicholas Kurti, Introduction, by Hervé This

Roisin Burke: The workshop: how, when, who...

Dan Vodnar : Recording and dissemination of outcomes

10.00-11.00h: Session 1

Additions of flavours to ingredients, question of bioactivity I

11.00-12.00 : Session 2

Additions of flavours to ingredients, question of bioactivity II

Hervé This: Content and availabilities

12.00-14.00h: Participants continue their discussions during lunch nearby.

14.00h-15.00h: Session 3

Loss of compounds, creation new flavours, trapping, inclusions, complexes I

15.00-15.30 : Coffee/tea break

15.30-17.00h: Session 4

Loss of compounds, creation new flavours, trapping, inclusions, complexes II

Hervé This, Exchange

19.30h: All together dinner

Thursday June 6th

09.00h : Welcome Tea/Coffee

09.30h-10.30h: Session 5

Changes in flavour through processing conditions I

Hervé This, Which reactions can be called after Maillard?

Barbara Rega, Model cakes help us understanding food reactivity leading to food quality determinants

10.30-11.00h: Coffee break

11.00-13.00h: Session 6

Changes in flavour through processing conditions II

Laura Febvay : are they lipids in the foam of espresso?

Hervé This, The colour of roasted coffee beans

13.00-14.00h: Participants continue their discussions during lunch nearby.

14.00h-15.00h: Session 7

Applications to cooking: why, how?

Michael Pontif, Note by note compounds

Dan Vodnar, From LAB Research Outcomes to Molecular Gastronomy Applications

15.00h-15.30h Coffee/Tea

15.30h-17.00h : Session 8

Processes for application (3D, 4D, Increased sensory experiences, NbN)

19.30h: All together dinner,

Friday June 7th

09.15h-10.30h: Session 8

Application of molecular and physical gastronomy to education

Linda Sellou, Molecular Gastronomy For Science Communication & Education in Singapore: Beginnings of the Journey

Christophe Lavelle, Science/education/cooking in both directions: science for cooking students and cooking for science students); showing a note by note fermentation drink, to have the participants test/taste

Roisin Burke, Application to education, and note by note cooking

10.30h-11.00h : Coffee break

11.00h-12.00h: Conclusion and perspectives

12.00h-14.00h : Participants continue their discussions during lunch nearby.

The Final Event of the 7th International Contest for Note by Note Cooking will take place in the afternoon, from 14.00h to 17.00h, in Amphitheater Risler, at AgroParisTech.

A list of hotels nearby

https://www.tripadvisor.ie/HotelsNear-g187147-d7887423-AgroParisTechParis_Ile_de_France.

List of participants:

Barbar Reine (Pr)

Enseignant: Université de Kaslik, Liban

Chercheur: UMR Ingénierie des Agro-polymères et Technologies Émergentes (IATE),
Montpellier

email : reine.barbar@supagro.fr; reinebarbar@usek.edu.lb

Bayol Clemence (Ms)

Group of Molecular Gastronomy, UMR 1145 AgroParisTech-Inra

16 rue Claude Bernard, 75005 Paris, France

Tel: +33 1 44 08 72 90

email : clemence.bayol@u-psud.fr

Berardi Roberto (Bebo) (Pr)

Department of Industrial Chemistry "Toso Montanari"

University of Bologna

Viale Risorgimento 4

I-40136 Bologna, Italy

phone: [+39-051-20-93698](tel:+39-051-20-93698)

skype: roberto.bebo.berardi

email-#1: roberto.berardi@unibo.it (forward to email-#2)

email-#2: roberto.bebo.berardi@gmail.com

web: <https://www.unibo.it/sitoweb/roberto.berardi/en>

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

Choi Eugene (Mr)

Dept of Food & Nutrition

College of Human Ecology

Hanyang University

[+82 2 2220 1204](tel:+82222201204)(Office)

[+82 2 2220 4204](tel:+82222204204)(Lab)

+33 6 82 05 31 43(Mobile in PARIS)

choieugene1011@gmail.com

www.hanyang.ac.kr

Febvay Laura (PhD)

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](tel:+33626384827)

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](tel:+33144081726)

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](tel:+33144081726)

E: laure.fort@wanadoo.fr

Gallot—Duval Doriane

Group of Molecular Gastronomy/ENSCM

16 rue Claude Bernard, 75005 Paris, France

t : [+33 1 44 08 17 26](tel:+33144081726)

E: doriane.gallot—duval@enscm.fr

Hantz Peter (Pr)

Senior Research Scientist, University of Pecs, Medical School, Institute for Biophysics.

hantz.retina@gmail.com

[+40-722-824515](tel:+40722824515); [+36-30-3872116](tel:+36303872116); [+49-176-28644098](tel:+4917628644098); [+41-79-9552687](tel:+41799552687)

www.hantz.hu

Kang Kwang Il (Pr)

Department Chemistry and Biology

Korea Science Academy of KAIST

105-47 Baekyangkwanmun-ro, Busanjin-gu

Busan, 614-100 KOREA (south)
Tel:82-51-606-2320 (office)
Mobile:010-7449-7582
Email kikangos@kaist.ac.kr

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

Lavernhe Lauriane

Group of Molecular Gastronomy/ESCOM
16 rue Claude Bernard, 75005 Paris, France
t : +33 1 44 08 17 26
E: laurianelvhe@hotmail.com

Luck Linda (Pr)

State University of New York at Plattsburgh
213 Hudson Hall
Plattsburgh, New York USA 12901
Telephone [1-518-572-1839](tel:15185721839)
email luckla@plattsburgh.edu

Croquette Neal (Mr),

Student, Louis-le-Grand High school,
123 rue Saint-Jacques, 75005 (France)
Mobile: [+33 06 88 80 92 57](tel:+330688809257)
E-mail: neal.croquette@gmail.com

Neri Andrea (Mr)

Group of Molecular Gastronomy/University of Perugia
16 rue Claude Bernard, 75005 Paris, France
t : +33 1 44 08 17 26
email: neriandrea1990@gmail.com

Persegani Adriano (Mr)

Directeur de la *Felicità* 13e arr. Paris / Big Mamma Group / Italie - France (Paris)

T : +33 7 89 65 40 05

email : adriano.persegani@hotmail.com

Pontif Michael (Mr)

Iqemus Inc.

www.iqemus.com

T : +33 6 79 70 66 29

E : michael.pontif@iqemus.com

Reyt Quentin (Mr)

Flavorist

QR Flavour Solutions

40, Rue d'Hautpoul, 75019 Paris, France

Tel : +33(0)6.71.25.97.85

Email: quentin@qrflavoursolutions.com

Rigault, Yolanda

Biochimiste, Ex-CEA

48 allée de la Blancharde, 91190 Gif sur Yvette, France

T : +33 [670376130](tel:670376130)

Yolanda.rigault@wanadoo.fr

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

Sellou Linda (Pr)

Chemistry Lecturer

National University of Singapore

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@inra.fr

Dan Cristian Vodnar, PhD, habil., Professor,

Vice-rector for Research

Department of Food Science

University of Agricultural Sciences and Veterinary Medicine

400372 Cluj-Napoca, Romania

Mobile: +40747341881

Fax: +40364815110

Alternative E-mail: vodnar_dan@yahoo.co.uk

Website: <http://danvodnar.objectis.net/>

Visit: DBU Alumni Romania

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:+82222204204)(Lab)

[+33 6 82 05 31 43](tel:+33682053143)(Mobile in PARIS)

hime@hanyang.ac.kr

www.hanyang.ac.kr

Wibowo Scheling (Mr)

Waterlelieplein 2 - Kessel Lo Belgium

Phone : +32484425499

Email : scheling@yahoo.com

Kim Yeeun (Ms)

Dept of Food & Nutrition

College of Human Ecology

Hanyang University

[+82 2 2220 1204](tel:+82222201204)(Office)

[+82 2 2220 4204](tel:+82222204204)(Lab)

[+33 6 82 05 31 43](tel:+33682053143)(Mobile in PARIS)

yen38@hanmail.net

www.hanyang.ac.kr

