

# **International Workshop on Molecular Gastronomy « N. Kurti »**

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**3-5 June 2015**

## **7 th Meeting (IWMG 07) on Thermal treatment of plant tissues**

Sponsored by:

AgroParisTech, INRA

**Director:**

Hervé This

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**Scientific Committee (inverse alphabetic order):**

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# 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 7th IWMG « N. Kurti » will discuss the thermal treatment of plant tissues.

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.

### 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 June 2:

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

## Wednesday June 3:

### Welcome coffee

9.30, room 31, AgroParisTech, 16 rue Claude Bernard, 75005 Paris

### Opening sessions

10.00-10.30: Introduction, by Hervé This :

- ~ In memoriam Nicholas Kurti
- ~ The state of Molecular Gastronomy today
- ~ The Free Open International Journal of Molecular Gastronomy (participants will be invited to propose articles in a special issue of the journal).

10.30-11.00: Molecular Gastronomy : the scientific aspect,

11.00-11.30 : Molecular Gastronomy and Education, by Roisin Burke

11.30-12.00 : Molecular Gastronomy and Culinary Art,

12.00-14.00: Lunch nearby.

### Beginning of discussions

14.00-15.30: Which exchanges between plant tissues and their environment during cooking?

Discussion leader: Rachel Edwards-Stuart

*15.30-16.00: Coffee break*

16.00-17.30: Modifications of consistency during cooking, including steam cooking  
Discussion Leader: Jose Miguel Aguilera

## Thursday June 4

09.15-10.30: Is there hexose dehydration (forming HMF) and sucrose hydrolysis inside vegetables during cooking? Are there other important molecular modifications? How are minerals exchanged ?

Discussion Leader: Roisin Burke

*10.30-11.00: Coffee break*

11.00-13.00: Questions of colors

Discussion Leader : Juan Valverde

*13.00-15.00 : Lunch*

15.00-16.45: Molecular Gastronomy in Education, focused on vegetable cooking

Discussion Leader: Christophe Lavelle and Bruno Cardinale

*16.45 -17.15: break*

17.15-18.30: About starch swelling

Discussion Leader : Jacquelyne Read

19.30: All together dinner,

## Friday June 5

09.15-10.30: Cooking in water: should it be hot or cold?

Discussion Leader: Marijana Pedovic

*10.30-11.00 : Coffee break*

11.00-13.00: The reproduction of plant tissues using the note by note strategy

Discussion Leaders : Hervé This

*13.00-15.00 : Lunch*

15.00-16.45: Conclusions, perspectives, decision tacking

*16.45 -17.15: break*

19.30: All together dinner

# List of participants:

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