



**Warsaw, 13 March 2014**

### ***Dr Evan Spruijt – the Winner of the Dream Chemistry Award***

*Dutch chemist Dr Evan Spruijt won this year’s Dream Chemistry Award. The members of the Award’s Scientific Committee have in this way expressed their appreciation for a visionary project of creating artificial cells – microdroplets of water capable of autonomous growth and division. Creation of such cells in the laboratory would be an important step towards a deep understanding of physical and chemical foundations of life.*

The Dream Chemistry Award (DCA), a prize awarded for a visionary research project waiting for implementation, was in this year presented to Dr Evan Spruijt, a chemist from the Ecole Supérieure de Physique et de Chimie Industrielles, France. Dr Spruijt, nominated by Prof. Wilhelm Huck from the Radboud University Nijmegen, won the DCA for a project of creating microdroplets of water that could be programmed so as to autonomously grow and divide under appropriate physical and chemical conditions – and thus to model the most important characteristics of the living cells. The winner received the prize at the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw (IPC PAS) – the Contest organiser.

„The Contest allowed me to forget for a moment about what I was working on at present, and to return to a research problem that has been bothering me for a long time: what physical and chemical processes are responsible for the growth and division of cells”, said Dr Spruijt, the Dream Chemistry Award winner.

The Dream Chemistry Award Contest is addressed to researchers from around the world, aged not more than 36, who defended their doctoral dissertation (in this year’s edition) in 2006 or later. To have the Contest entry accepted, the candidate must have been nominated by a researcher holding the academic doctoral degree or higher, with at least twenty years’ experience in exact/life sciences since the date of publication of his/her first scientific paper.

„Many researchers, if not all, dream for years about solving scientific problems bothering them. Such dreams are extremely important, because they power human motivation. The motivation is essential for problem solving, and – as we know from the history of science – finally the problem is solved for the benefit of mankind”, said Prof. Robert Hołyst, the director of the Institute of Physical Chemistry of the PAS.

The Honorary Committee of the Dream Chemistry Award Contest is composed of outstanding chemists: Prof. Richard Schrock (MIT), Nobel Prize winner; Prof. Krzysztof Matyjaszewski (Carnegie Mellon University) and Prof. Bartosz Grzybowski (Northwestern University).

The dream-project presented by Dr Spruijt in the present Dream Chemistry Award edition relates to recreating fundamental characteristics of the living cells, including their growth and division, in microdroplets inside microfluidic systems. The microdroplets of water containing synthesised, appropriately selected analytes would swim and gradually grow. A carefully controlled surrounding would allow for determining if, for instance, pressure is not one of the factors responsible for initialisation of the division of growing artificial cells.

“My microdroplets would not be typical living cells. They should be rather considered to be simplified cell models, models that can be constructed today. It is the simplicity of the models that could help find experimentally what physical and chemical processes are responsible for growth and division of real cells”, explained Dr Spruijt.

The other Dream Chemistry Award finalists are: Dr Hal Alper, biochemist from the University of Texas, Austin, USA (nominated by Prof. Thomas Truskett); Dr Eugen S. Andreiadis, chemist from the Commissariat a l'Énergie Atomique (CEA), Marcoule, France (nominated by Prof. Adam Proń from the Faculty of Chemistry, Warsaw University of Technology); Dr Paul C. Blainey, biochemist from the Massachusetts Institute of Technology, Cambridge, USA (nominated by Prof. Robert Holyst from the Institute of Physical Chemistry of the PAS, Warsaw), and Dr Peggy P. K. Lo, biochemist from the Department of Biology and Chemistry, City University of Hong Kong (nominated by Prof. Istvan T. Horvath).

The Award's Scientific Committee is composed of renowned Polish scientists working in chemistry, physics, biology, medicine and materials engineering. The list of the members of the Scientific Committee is public and available from the Contest's website. The members of both Committees signed a non-disclosure and non-use statement with regard to the contents of the projects submitted for the Contest.

More detailed information on the Dream Chemistry Award Contest can be found at: <http://www.ichf.edu.pl/dreamchemistryaward/>

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The Institute of Physical Chemistry of the Polish Academy of Sciences (<http://www.ichf.edu.pl/>) was established in 1955 as one of the first chemical institutes of the PAS. The Institute's scientific profile is strongly related to the newest global trends in the development of physical chemistry and chemical physics. Scientific research is conducted in nine scientific departments. CHEMIPAN R&D Laboratories, operating as part of the Institute, implement, produce and commercialise specialist chemicals to be used, in particular, in agriculture and pharmaceutical industry. The Institute publishes approximately 200 original research papers annually.

## **FINALISTS PROFILES:**

### **Dr Hal Alper**

Biochemist from the Department of Chemical Engineering, University of Texas, Austin, USA. He graduated from the Chemical Engineering Department, University of Maryland, in 2002, and in 2006 obtained his PhD degree from the Massachusetts Institute of Technology, Cambridge, USA, for the dissertation related to metabolic engineering of microorganisms. He completed two postdoctoral trainings dealing with the engineering of mammalian systems for protein production and the engineering of yeast systems for the production of biofuels. H. Alper has authored or co-authored more than 50 scientific publications.

### **Dr Eugen S. Andreiadis**

Chemist from the Commissariat a l'Énergie Atomique (CEA), Marcoule, France, where he works on the development of efficient solvent extraction processes for the nuclear fuel cycle. He is an expert in organic, coordination and surface chemistry and photoactive supramolecular systems and nanomaterials. He graduated from the Polytechnic University of Bucharest, Romania, and defended his doctoral dissertation in 2009 at the Joseph Fourier University of Grenoble, France. E. S. Andreiadis has authored or co-authored over a dozen of scientific publications.

