



THE MILLENNIUM
TECHNOLOGY
PRIZE

Finland's tribute to life-enhancing technological innovation

MILLENNIUM TECHNOLOGY PRIZE 2010

March 1, 2009

Call for Nominations

NOMINATION GUIDE

2004



Tim Berners-Lee

2006



Shuji Nakamura

2008



Robert Langer

2010





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GREETINGS



The world needs scientific and technological breakthroughs. With air pollution affecting the lives of millions of people and the need for clean water becoming a major issue for even more, we cannot rely on yesterday's solutions. While the justifiable ambition of a better life for billions requires new energy sources, we cannot allow this to destroy the environment we depend on. Our 'developed' societies are also full of problems requiring intelligent solutions.

The only way forward is to recognize and help accelerate the deployment of new, effective technology. Innovation is crucial to the future of mankind.

The Millennium Technology Prize was created to inspire and recognize innovations that provide answers to the challenges of our time and promote people's quality of life. At the level of one million euros, the Prize ranks as one of the world's most prestigious individual awards for technological innovation.

Your nomination of worthy candidates for the Prize, based on the guidelines presented in this booklet and detailed on our website, will be both warmly welcome and highly appreciated.

Dr. Stig Gustavson

Chairman
Technology Academy Foundation



NOMINATION GUIDELINES

General Principles The Millennium Technology Prize is awarded for a specific groundbreaking innovation in the field of technology.

The winning innovation must be shown to promote people's quality of life and sustainable development both now and in the future. The Prize is not intended for cumulative accomplishments over a lifetime career. Citizens of all nations are eligible.

Significant factors in the evaluation process include the number of people affected by the innovation and the extent of the changes they may experience as a consequence. Technologies that have not yet been applied in practice are not eligible for the award.

The Prize is also intended to stimulate further cutting-edge research and development in science and technology. Due consideration is also therefore given to each nominee's current activities. Ideally, nominees continue to be engaged in work that further promotes their innovation and its practical applications.

At the one million euro level, the Millennium Technology Prize ranks as one of the world's most prestigious awards.

The Millennium Technology Prize is under the patronage of the President of Finland.

Selection process The Finalists and the Prize Winner are selected by the Board of the Technology Academy Foundation on the basis of recommendations by the International Selection Committee, a distinguished group of experts. The Board's decisions are final and without appeal.

The nomination period begins on 1st March 2009 and ends on 1st October 2009.

Nominations received by the Technology Academy Foundation are first reviewed by a pre-selection group consisting of a network of leading Finnish and international scientists and technologists who cooperate with the International Selection Committee. On the basis of this work, the International Selection Committee prepares a list of Finalists for the Board's approval.

The list of Finalists, all of whom must accept their appearance on the list, will be announced in early spring 2010. In this context all the Finalists, their research and their innovations will be presented to the international media and the general public in their domestic countries. The International Selection Committee then convenes in Helsinki to prepare its recommendation for the Prize Winner to the Board.

The winner of the 2010 Millennium Technology Prize will be announced during Millennium Technology Week in Helsinki in June 2010. Awards for the Prize Winner and all the Finalists will be presented at a festive award ceremony by the President of the Republic of Finland *Tarja Halonen*.



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Nominees The Prize can be awarded to a research and development team or to a single individual. It can also be shared between two or three individuals who are shown to have made a critical contribution of essentially equal merit to the success of the innovation.

In cases where the International Selection Committee judges that the merit for an innovation should be ascribed differently from that proposed in the nomination documents, the committee may reduce or extend the number of individuals being considered.

Nominators Any science and engineering academy, university, research institute, industrial enterprise or association may submit a nomination for the Millennium Technology Prize. If the nominating organisation considers more than one innovation to be worthy of the Millennium Technology Prize, more than one nomination may be submitted.

Self-nominations are not accepted.

Nomination Documents All nomination material must be presented in English and sent to the Technology Academy Foundation, preferably by email. A nomination consists of the following documents:

1. NOMINATION FORM (one page)

The nomination form can be found at www.millenniumprize.fi. Please complete a separate Nomination Form for each candidate.

2. NOMINATION LETTER (1–5 pages)

The Nomination Letter and any possible appendices should cover the following topics:

- a) Specific details of the cited innovation and the underlying technology change
- b) The present and future impact of the innovation on quality of life and sustainable development
- c) Identification of each nominee and their role in the innovation process
- d) Details of each nominee's current activities
- e) Copies of possible media coverage concerning the nominee and the innovation.

3. TWO SUPPORTING LETTERS (1–3 pages each)

Letters supporting the nomination written by two distinguished individuals from separate organisations are required. These letters must refer explic-



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itly to both the nominee and the innovation presented in the Nomination Letter. Additional supporting letters may be submitted if they are considered necessary to describe particular features of the nominee and the innovation. Authors may email their Supporting Letters directly to the Technology Academy Foundation.

4. NOMINEE'S CURRICULUM VITAE (1–3 pages)

This CV should be a concise list that includes the nominee's education, positions held, industrial and academic affiliations, a list of key patents and publications, honours granted and awards received.

A separate CV is required for each nominee.

Period of Eligibility All qualifying nominations are valid for one selection round.

Submission All nomination material must be presented in English and emailed to nomination2010@millenniumprize.fi by *1st October 2009*. Please combine the nomination material you are transmitting into a single email message whenever possible.

Nominations that cannot be sent by email should be sent to the following address: Technology Academy Foundation, Fredrikinkatu 25 B 26, 00120 Helsinki, Finland.

For specific guidelines and enquiries on submitting a nomination, please contact Dr.Tech. *Ainomaija Haarla*, President and CEO of the Technology Academy Foundation, Finland: ainomaija.haarla@technologyacademy.fi, ainomaija.haarla@millenniumprize.fi. Please visit also www.millenniumprize.fi.

Information in the nomination documents that concerns selected Finalists may be used to prepare publicity material describing the Finalists and their innovations.

MILLENNIUM TECHNOLOGY PRIZE WINNERS

In 2004 the Winner was *Sir Tim Berners-Lee* for his invention of the World Wide Web (www).

In 2006 *Professor Shuji Nakamura* was awarded for his invention of bright-blue LEDs and the blue laser.

In 2008 the Winner was *Professor Robert Langer* for his inventions in biomaterials for controlled drug release and tissue regeneration. In addition five Laureates (three inventions) were awarded in 2008.



MEMBERS OF THE INTERNATIONAL SELECTION COMMITTEE



CHAIRMAN

Professor Risto Nieminen, Finland

Dr. Nieminen is Professor of Physics at Helsinki University of Technology. He directs COMP, the National Center of Excellence in Computational Nanoscience and the National Graduate School in Materials Physics. His area of research includes condensed-matter and materials physics as well as computational methods. He holds positions in several international scientific organisations and advisory committees as well as editorships in many scientific publications.



Professor Eva-Mari Aro, Finland

Dr. Aro is Professor in Physiological Botany at University of Turku. Dr. Aro's primary area of research is focused on photosynthesis, solar energy conversion and chloroplast signalling. She holds several honours and awards, acting as Academy Professor at the Academy of Finland where she currently heads the Center of Excellence. She has worked in a number of leading international research institutions and universities. Dr. Aro holds key positions in several international organisations, including the Presidency of the International Society of Photosynthesis Research (ISPR), and Member of the Steering Committee of the European Initiative for Clean Solar Fuels.



Professor Mikko Hupa, Finland

Dr. Hupa is Professor and Dean of the Faculty of Technology at the Åbo Akademi University in Turku. He is Chairman of the National Centre of Excellence in Process Chemistry (PCC) at Åbo Akademi, a cross-disciplinary research centre working with novel processes and products from renewable raw materials. Dr. Hupa is also chairman of the National Graduate School in Chemical Engineering (GCE) and holds positions in a number of international organizations including editorial board positions. Dr. Hupa's research interests include high-temperature chemistry, the clean combustion of biomass fuels and advanced inorganic materials.



Professor Bengt Kasemo, Sweden

Dr. Bengt Kasemo has been Professor of Physics at Chalmers University of Technology, Gothenburg, since 1983. He heads a research group of 20 people active in Surface Science, Nanoscience and Nanotechnology, Catalysis for emission cleaning, and Sustainable Energy Technology. He is the co-founder of the internationally recognized Competence Center for Catalysis at Chalmers, with member companies such as Volvo AB, Volvo Personal Cars (Ford), Saab AB (GM), Scania AB and Haldor Topsoe A/S. He has published some 370 scientific papers and cited more than 9000 times.



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Professor Martti Mäntylä, Finland

Dr. Mäntylä is Professor of Information Technology at the Helsinki University of Technology and is currently participating in preparations for the Aalto University and leading several research projects. In 1999–2008 he was the founding Director of the Helsinki Institute for Information Technology, a joint research institute set up by the Helsinki University of Technology and the University of Helsinki, at which he still co-leads the Ubiquitous Interaction research group. His area of expertise focuses on the user-centric design of digital communication services and products.



Professor Konrad Osterwalder, Switzerland

Dr. Osterwalder is Rector of the United Nations University and Under-Secretary-General of the United Nations. From 1995 to 2007, he also served as Rector of ETH Zürich, the Swiss Federal Institute of Technology, where he earned his doctorate in theoretical physics in 1970. His research focuses on the mathematical structure of relativistic quantum field theory, on elementary particle physics and on statistical mechanics. He has been teaching the natural sciences and engineering for more than twenty years.



Professor V.S. Ramamurthy, India

Dr. Ramamurthy is a well known Indian nuclear scientist with several research contributions in the areas of nuclear fission and heavy ion reaction mechanisms. After serving as Secretary to the Government of India in the Department of Science and Technology for nearly eleven years, Dr. Ramamurthy is currently Homi Bhabha Chair professor at the Inter-University Accelerator Center in New Delhi. He also serves as the chairman of the Board of Governors of the Indian Institute of Technology, New Delhi and Chairman of the Recruitment and Assessment Board of the Council of Scientific and Industrial Research, India. He is also Chairman of the IAEA's Standing Advisory Group on Nuclear Applications.



Professor Henry T. Yang, United States of America

Dr. Yang is the Chancellor of the University of California, Santa Barbara. Previously he was the Neil A. Armstrong Distinguished Professor of Aeronautics and Astronautics and Dean of Engineering at Purdue University. He is a member of the U.S. National Academy of Engineering. He has received five honorary doctorates and other awards. He serves on several boards, including the Steering Committee



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CONTACT INFORMATION

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Nomination material emailed to nomination2010@millenniumprize.fi