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Supporting Medicine 2.0: AXA & ESPCI launch a Chair in Biomedical Imaging endowed with € 500,000

Hosted at the ESPCI ParisTech's Langevin Institute "Waves & Images", this Chair in Biomedical Imaging has been awarded to Professor Emmanuel Fort, one of the leading experts in wave-matter interaction. The goal of the Chair is to contribute to a better detection and representation of bodies, vessels and human tissues and to pave the way for less invasive and traumatic surgeries and therapies for patients.

This innovative scientific programme is funded by the AXA Research Fund, the scientific philanthropy initiative of global insurance group AXA. This amount tops the € 38 million already granted since 2007 to support international basic research on health risks.

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Emmanuel Fort © ESPCI ParisTech



Will tomorrow's medicine enable us to fight battles against cardiovascular, cancer and neurological diseases in a remote fashion?

From detection to diagnosis to treatment, scientific research is constantly looking for new and better tools to improve the quality of care of patients. However, the latter is closely related to the ability of healthcare professionals to visualize organs, human tissue and vessels, the vectors of therapeutic intervention. Advances in biomedical imaging, precisely because they allow for a better representation and detection of tissues and problematic masses in the body will enable less invasive surgeries and traumatic therapies for patients in the future.

The work of Emmanuel Fort, the AXA-ESPCI Chair holder, is at the heart of these issues, at the crossroads of fundamental physics research and technological innovation. A former student at Télécom Paris-Tech and an École Polytechnique graduate, he was appointed lecturer at the University Paris-Diderot in 2000 and joined the Langevin Institute (winner of the *Laboratoire* and *Équipe* *d'Excellence* awards) at ESPCI ParisTech in 2010. He is interested in imaging techniques and innovative optical sensing techniques for biomedical applications in diagnosis and therapy (from optics to photonics, including ultrasound and fluorescence). Another part of his activities is more fundamental and focuses on the analogies between quantum and classical systems.

Thanks to the AXA Chair endowment, his research will not only help refine diagnostic and therapeutic treatments in vivo, in a non-invasive way, but also develop virtual biopsy operations. In addition, he will study the risks and benefits of the therapeutic use of nanoparticles and is already involved in several national and international collaborations, including with MIT and the University of Singapore.

Besides the obvious scientific value of Emmanuel Fort's results (fifty scientific papers published as of today), **the innovative nature of his research** allowed him to file several international patents. Laureate of the 2009 Diderot-Innovation Prize and of the 2012 Jean-Jerphagnon Prize, this young researcher is identified by the international community as one of the up-and-coming scientists of the young generation.

This new endowment tops the € 38 million already granted since 2007 by the AXA Research Fund to 180 academic research teams working in the field of health risks, including institutions such as the CNIO, the university of Newcastle, University of Strasbourg, and École Polytechnique.

About ESPCI ParisTech

ESPCI ParisTech is a leading French *Grande École* training scientists and engineers at the graduate level, as well as a world renowned research institution and an engine of innovation for industry. Founded in 1882, ESPCI ParisTech has been under the ægis of the City of Paris for over 130 years. It counts among its current and former faculty a number of Nobel laureates (Pierre & Marie Curie, Frédéric Joliot-Curie, Pierre-Gilles de Gennes and Georges Charpak), as well as other highly innovative scientists (most notably Paul Langevin).

Located in the heart of Paris, the ESPCI ParisTech campus is home to 17 laboratories and research institutes operating at the forefront of fundamental and applied research in physics, chemistry and biology, with an output of one article per day, one patent per week and several start-ups spun-off each year. $\frac{2}{3}$ of ESPCI graduates complete a PhD and 84% of ESPCI Alumni eventually launch a career in industry. ESPCI ParisTech is a founding member of the Paris Sciences et Lettres Research University and of ParisTech, the Paris Institute of Technology.

For more information: www.espci.fr/en

Twitter: [@ESPCI_ParisTech](https://twitter.com/ESPCI_ParisTech)

About the AXA Research Fund

The AXA Research Fund is the scientific philanthropy initiative of AXA. It aims to further understanding and management of today's and tomorrow's risks. Since its founding in 2007, the Fund has committed a total of € 100 million to more than 360 promising research projects at leading academic institutions in 27 countries around the world.

The Fund undertakes long-term partnerships, focusing on research to contribute to the public debate and help manage or prevent risks to the environment, human life and societies.

For more information: www.axa-research.org

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About the AXA Group

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The AXA Group is included in the main international SRI indexes, such as Dow Jones Sustainability Index (DJSI) and FTSE4GOOD. It is a founding member of the UN Environment Programme's Finance Initiative (UNEP FI) Principles for Sustainable Insurance and a signatory of the UN Principles for Responsible Investment.