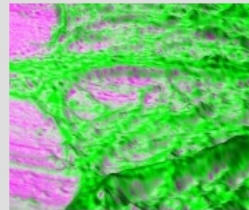


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SUPERTWIN: A QUANTUM MICROSCOPE BEYOND THE LIMITS OF CLASSIC OPTICS

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It will be an Italian research centre, the Bruno Kessler Foundation of Trent, to lead the European SUPERTWIN consortium which in the next three years will build the first prototype of a quantum microscope. This is a scientific and at the same time industrial project, in which the development of technology and its transfer to the market have in [A.P.E. Research](#), a company of AREA Science Park, leader in the fields of microscopes and nanotechnology, its industrial partner.

The goal of the SUPERTWIN project is to get beyond the limits of classical optics to refine a super powerful microscope, able to exploit the properties of "twin" photons, elementary particles of light theorised by quantum physics. It will be possible then to achieve a resolution of several tenths of a billionth of a metre (nanometres) allowing us to observe for example details of viruses or proteins.

"We are aware that the goals we have established are very ambitious" explains Stefano Prato, Manager of Research at A.P.E. Research, "but we are also aware of the qualities of the SUPERTWIN consortium and we trust we will be able to repeat the successes of the preceding European projects we have participated in. With this programme we will have an important opportunity to expand the range of applications of our competence in the field of advanced microscopes."

The researchers of A.P.E. Research in particular will contribute to the construction of a demonstration system of the technology that will be the basis for the functioning of the microscope.

"The quality of the project is certainly high and the competition very strong" explains Stefano De Monte of A.P.E. Research, "as demonstrated by the fact that in response to public call H2020-FETOPEN-2014-2015 over 600 applications were presented, a dozen were financed and SuperTwin was the fourth project in the ranking".

The project will finish in 2018 and will receive European funding equal to 3,900,000 Euros. This is part of the Horizon 2020 programme, and in particular of its research and innovation activities in the science and technology field to explore development sectors unknown today which will define the technologies of the future.

The SUPERTWIN consortium includes, in addition to the Bruno Kessler Foundation of Trent, A.P.E. Research srl (Italy), Centre Suisse d'Electronique et Microtechnique (Switzerland), III-V Lab (France), Single Quantum (Holland), University of Bern (Switzerland), École Polytechnique Fédérale de Lausanne (Switzerland), Institute of Physics, National Academy of Sciences of Belarus (Belarus), LFoundry S.r.l. (Italy).

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