



Imagine Eyes'™ products power new clinical research into the applications of adaptive optics for early diagnosis of retinal pathologies

Imagine Eye's mirao™ 52-d Electromagnetic Deformable Mirror plays a pivotal role in improving the resolution of Optical Coherence Tomography by a factor of 80, driving new research into the clinical applications of adaptive optics in retinal imaging for early pathology detection.

ORSAY, FRANCE – February 21, 2007 – Over the course of 2006, Professor Wolfgang Drexler¹ and his team^{2,3} used Spectral Domain Optical Coherence Tomography (SD-OCT), enhanced with Imagine Eyes' patented adaptive optics technology, to develop new clinical imaging techniques dedicated to improving early detection and treatment options for retinal pathologies. In late autumn, the team unveiled some of the first-ever, high-definition, 3-dimensional images of the retinal microstructures of a living human eye. Even more, these images were produced without any damage or discomfort to the subjects that participated in the study.

What sets Pr. Drexler's work apart from other projects in this domain is that his single deformable mirror technique is capable of imaging the retina of an exceptionally large range of subjects, including those whose corneas' present near pathological defects that impede other adaptive optics techniques from being widely used. One of the key areas of interest of this new approach is in the early detection of macular degeneration (ARMD), one of the leading causes of debilitating vision loss in the world (US extrapolated statistics show more than 10 million current cases of ARMD and 200,000 new cases are reported each year in that country alone, whereas extrapolated statistics for European Union countries show more than 20 million current cases of ARMD⁴).

"As is the case with many pathologies, early detection is paramount to slowing the progress of a disease as well as to providing timely treatment" said Pr. Drexler who will receive the prestigious Cogan Award at the 2007 Annual ARVO Meeting for his recent work. He continues by adding, "this work will play an important role in the development of new medical devices that will overcome the limits of current technologies that ophthalmologists rely on for retinal imaging."

Standard OCT has a limited voxel (three-dimensional) resolution of 15 µm x 15 µm x 10 µm, leaving the details of the photoreceptor cells that enable vision indistinguishable to researchers. Professor Drexler used Imagine Eyes' patented mirao 52-d Electromagnetic Deformable Mirror, along with chromatic aberration correction, to improve the resolution of his OCT equipment by a factor of 80, or up to an astounding 3µm x 3µm x 3 µm.

Imagine Eyes is currently developing a commercial version of its next generation retinal camera that is based on its adaptive optics technology in conjunction with three partner institutions⁵, world-renowned for their expertise in retinal ophthalmology. The prototype of the device, scheduled for delivery in 2007, will enable ophthalmologists to take advantage of adaptive optics in everyday clinical settings, opening treatment options and improving the prognostics for their patients.

For more information, please visit our website at www.imagine-eyes.com or contact our Director of Communications, Mark Zacharria at mzacharria@imagine-eyes.com or +33 (0)6.81.55.99.06.

1 Biomedical Imaging Group, Department of Optometry and Vision Sciences, Cardiff University, Wales, UK

2 Laboratorio de Optica, Universidad de Murcia, Centro de Investigacion en Optica y Nanotecnologia, Campus de Espinardo, Murcia, Spain

3 Laboratoire d'Etudes Spatiales et d'Instrumentation en Astrophysique, Observatoire de Paris-Meudon, Meudon, France

4 Source www.cureresearch.com

5 Centre Hospitalier National d'Ophtalmologie des Quinze-Vingts, Paris, France; Centre Hospitalier Intercommunal de Créteil, Créteil, France; Hôpital Necker Enfants Malades, Paris, France.

About Imagine Eyes

Imagine Eyes is an ophthalmic medical device company that applies its unique expertise in ocular wavefront metrology and adaptive optics to focus on professional's needs for ophthalmic diagnostic devices that cannot effectively be addressed by other means. The company, founded in 2003 by leading scientists in the fields of adaptive optics and eye research, maintains its position as a technical leader in this domain through its innovative research and development program, wide array of patents and acclaimed product line.

©2007 Imagine Eyes. All rights reserved. Imagine Eyes, the Imagine Eyes logo, irx3, crx1, and mirao are trademarks and/or registered trademarks of Imagine Eyes. Communications managed by Elucido Partners www.elucido-partners.net.