The prize "Edouard Fabre 2015" for contributions to the physics of laser-driven inertial confinement fusion and laser-produced plasmas has been assigned to Pierre Michel, Livermore Lab.

For the second year, the COST Action MP1208 "Developing the physics and the scientific community for Inertial Confinement Fusion" has promoted the Prize entitled to the memory of Edouard Fabre, in collaboration with ILP, Institut Lasers et Palsmas in France. The Prize is especially addressed to researchers in full activity, within about 15 years after obtaining their Ph.D. It has been delivered at the next EPS conference on Plasma Physics held in held in Lisbon, Portugal, from 22 to 26 June 2015.

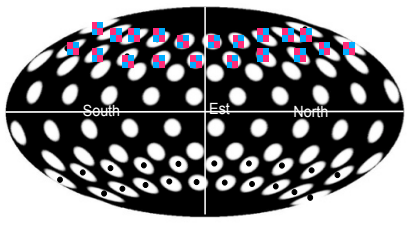
Edouard Fabre has been one of the fathers of ICF studies in Europe, and a promoter of the direct-drive approach to Inertial Fusion for the Future Production of Energy. He began to work on CO2 and ruby laser, later moving to Nd:glass. In the 70's he gathered the French laser and plasma scientists to work on ICF and related physics in a research group (GRECO), which was at the basis of future developments in the fields. In 1988 he founded LULI (Laboratoire pour l'Utilisation des Lasers Intenses), which has played a leading role in Europe in civilian academic research in ICF and HED science. The 6-beam laser facility at LULI allowed to perform academic implosion experiments all over the 80's. At the beginning of the decade, he and his collaborators showed that using short-wavelength lasers one could increase absorption, reduce the impact of parametric instabilities, minimize hot electron production and optimize hydrodynamic efficiency. This has opened the way to using short wavelength lasers for implosion experiments, which is nowadays the standard approach to compressing ICF targets.

Dr. Michel's graduate research was performed at LULI. The main PhD thesis topic of Pierre Michel was on the loss of coherence of the laser beams as they propagate through the plasma. After PhD, he joined Pr. Wim Leemans' group and worked on laser-plasma interaction for ultra-compact particle accelerators using ultra-intense lasers, and finally joined Lawrence Livermore National Laboratory in 2006 where he is currently working on the physics of laser-plasma interactions (LPI). Dr. Michel's work is primarily theoretical, although he is strongly involved in the planning and analysis of experiments on the National Ignition Facility (NIF). Since 2009, he has been leading the "LPI working group" in support of the National Ignition Campaign.

He investigated the energy transfer process between multiple crossing laser beams for the NIF with results that have had a direct impact on experimental programs at NIF. He showed that potentially detrimental laser-plasma interaction effects could be controlled and hence used to adjust the implosion symmetry. This technique utilizes the self-generated plasma-optic gratings on either end of an indirect-drive ICF target (the "hohlraum") to control the laser power distribution inside the hohlraum. This tuning scheme was demonstrated in the initial experiments of the National Ignition Campaign in 2009 and is now used on almost all NIF shots.

The COST Action MP1208 aims at developing a scientific community in Europe working in Inertial Confinement Fusion and High Energy Density Physics. The Action is complementary and synergic to several initiatives going on in Europe, in particular the construction of Laser Megajoule and Petal in France (LMJ/PETAL facility), which will open to the European academic community for civilian research in 2017.

More info at:
http://laserfusion.eu/



Countries participating to MP1208 Action: France (proposer) Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Germany, Greece, Hungary, Ireland, Israel, Italy, Lithuania, Poland, Portugal, Romania, Serbia, Spain, Switzerland, United Kingdom

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