

学术报告题目: New phenomena during femtosecond laser ablation of transparent dielectrics

报告人: Dr. Liu Yi (Laboratoire d'Optique Appliquée, France)

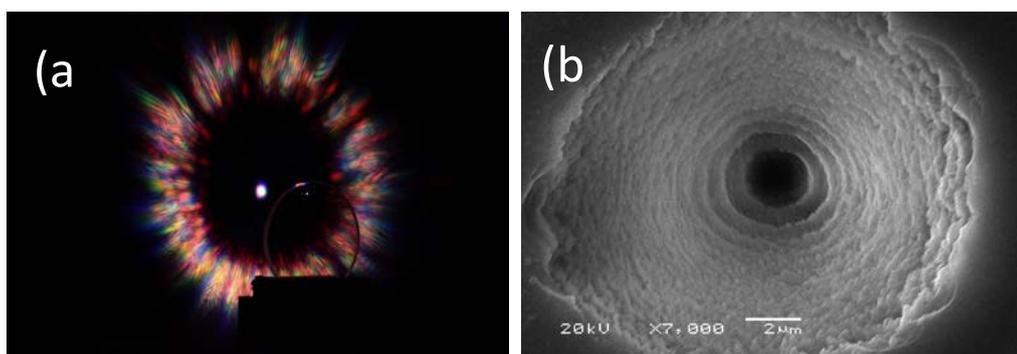
邀请人: 陈世华

时间: 6月17号(周一)下午2:00

地点: 田家炳南楼203

学术报告摘要:

In this talk, I will present two recent experimental works of laser ablation on transparent dielectrics performed in the LMI group of LOA. In the first part, I shall talk about the first experimental investigation on the spatial and spectral evolution of femtosecond laser pulse during laser ablation of transparent materials. A novel, universal phenomenon, coined as ciliary white-light (CWL), was observed on a large number of transparent dielectrics [see Fig. 1 (a)]. Due to its importance, this work has been published in PRL and was selected for a focus in Physics. In the second part, I shall talk about another universal phenomenon occurred in fused silica---laser induced periodic annular surface structures (LIPASS)---when irradiated with multiple femtosecond laser pulses [see Fig. 1(b)]. This novel morphology will be explained in terms of the interference between the reflected laser field exiting the damage crater and the incident laser pulse.



[1] Y. Liu\*, Y. Brelet, Z. He, *et. al.*, Ciliary white-light: Optical aspect of ultrashort laser ablation on transparent dielectrics, *Physical Review Letters* **110**, 097601 (2013).

[2] Ph. Ball, Focus: Rainbow Pattern May Allow Laser Damage Monitoring, *Physics* **6**, 24 (2013).

Liu Yi 研究员简介:

Dr. Yi Liu obtained his B. S. in Lanzhou University (2001) and his PhD degree in Peking University (2006). From 2006, he worked as a postdoctoral researcher in Laboratoire d'Optique Appliquée (France). In 2009, he joined the French National Center for Scientific Research (CNRS) as a tenured researcher. His research interests include filamentation, Terahertz radiation and its applications, laser ablation on solids, etc. He has authored/coauthored more than 30 papers in peer-reviewed journals (including 6 Phys. Rev. Lett., 6 Appl. Phys. Lett. etc). He is the reviewer for Phys. Rev. Lett, Phys. Rev. E, Opt. Lett., Opt. Express, Appl. Phys. Lett. etc.