

*Giovedì, 13 ottobre, 2011, ore 10.45*

**Aula Bruno Brunelli, Centro Ricerche Frascati**

*M. Johnston*

**Univ. di Oxford, Oxford, UK**

## **TERAHERTZ TIME DOMAIN SPECTROSCOPY: PRINCIPLES AND APPLICATIONS**

*In conventional optical spectroscopy only the intensity of light may be recorded, however in time-domain spectroscopy the electric field of the light is recorded as a function of time giving complete amplitude and phase information of the light. This additional information allows the complete dielectric function of materials to be determined directly, thus allowing many physical properties of the matter such as charge density and conductivity to be extracted.*

*In this talk I will introduce the technique of terahertz (THz) time-domain spectroscopy, and describe how we use it to observe charge dynamics on a picosecond time-scale. Recent measurements of charge dynamics in semiconductors will be presented and the benefits and challenges of applying the technique to plasma diagnostics will be addressed*

*Segreteria Scientifica e  
Relazioni Esterne*

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Agenzia Nazionale per le Nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile  
Centro Ricerche Frascati, Via E. Fermi, 45, 00044 Frascati

Per informazioni contattare: Maria Polidoro, Tel. 06 9400 5309; e-mail: [maria.polidoro@enea.it](mailto:maria.polidoro@enea.it)