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### MPNS COST Action TD1007

## Bimodal PET-MRI molecular imaging technologies and applications for in vivo monitoring of disease and biological processes

The rapid growth in genetics and molecular biology combined with the development of techniques for transgenic small animals has led to an increased interest in *in vivo* preclinical molecular imaging; PET-MRI has gained attention over the past five years due to the complementary advantages of those technologies, including soft tissue contrast and low radiation. Molecular imaging with PET-MRI is an interdisciplinary topic; new instrumentation, data acquisition strategies, image processing and reconstruction algorithms need to be developed, evaluated and optimised. In addition, bimodal contrast agents, including nanoparticles are promising candidates for a number of preclinical and clinical diagnostic and therapeutic applications. Although a number of prototype hybrid systems are being developed, enhancing interaction with end users is still critical. Recently, four prototypes of integrated hybrid PET/MRI scanners, were installed at two PET centres in Europe Germany and the United States. Understanding the emerging biological needs, preclinical and clinical challenges, will provide the directions for the design of efficient bimodal probes and optimized imaging equipment. The Action fulfils the need for European coordinated research in the development and application of peak technologies, aiming to bridge the gap between basic biological research and preclinical application with significant social impact.

(Descriptions are provided by the Actions directly via e-COST.)

### Materials, Physical and Nanosciences COST Action TD1007

- ▶ **Description**
- ▶ Parties
- ▶ Management Committee

### General Information\*

**Chair of the Action:**  
[Prof George LOUDOS](#) (EL)

**Vice Chair of the Action:**  
[Prof Christer HALLDIN](#) (SE)

**Science officer of the Action:**  
[Dr Mafalda QUINTAS](#)

**Administrative officer of the Action:**  
[Ms Ange Marie INA UWASE](#)

### Downloads\*

**Action Fact Sheet**  
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**Annual Progress Conference Report**  
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### Websites\*

**Action website:**  
<http://www.pet-mri.eu>

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Last updated: 18 May 2011 

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