

1a) Organisation of the Fusion Programme of the Hellenic Republic

The Association Euratom-Hellenic Republic was formally instituted, when the Association Contract ERB 5005 CT 99 0100 between Euratom and the Hellenic Republic was signed on 22 June 1999 and the Steering Committee and the Head of the Research Unit (J. Vomvroidis) were appointed. In addition, an Administrative Committee has been established as the governing body for fusion activities in Greece and the responsibilities for administering the Contract of Association have been delegated to the Institute for Nuclear Technology and Radiation Protection of the National Centre for Scientific Research "Demokritos" (present director: A. Youtsos). Before the establishment of the Association, fusion activities were co-ordinated by the Consultative Committee for Fusion Activities in Greece (CCFA-G) and being funded by Euratom via cost-sharing contracts (since 1991). [cheap generic cialis](#) [generic cialis pills online](#) [generic cialis 10 20 mg](#) [cialis cost 20mg](#) [caverta cialis cheap](#) [cialis 20 mg discount](#)

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1b) Fusion Research in Greece and International Collaborations

The work programme of the Association includes activities in Physics and Underlying Technology. In addition, the Association undertakes Technology Tasks. These activities are conducted in collaboration with other partners to the Euratom Fusion Programme.

In particular, the present scientific and technical **Physics Programme** is performed in the following laboratories (with mention of Principal Investigators and active collaborations):

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National Centre for Scientific Research "Demokritos", Institute for Nuclear Technology and Radiation Protection, Athens (N. Tsois and M. Tsalas):

SOL and divertor physics diagnostics, data base development and simulation,

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(in collaboration with IPP and JET).

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National Technical University, School of Electrical and Computer Engineering, Athens (J. Vomvoridis and K. Hizanidis) and University of Athens, Department of Physics, Athens (I. Tigelis):

High-power microwaves and plasma/electron beam instabilities, non-linear relativistic dynamics of charged particles, EM scattering,

(in collaboration with CRPP, FZK and HUT).

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University of Ioannina, Department of Physics, Ioannina (G. Throumoulopoulos):

Stationary states in magnetically confined plasmas,

(in collaboration with IPP).

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FORTH, Institute of Electronic Structure and Lasers, Heraklion (P. Lalousis):

3-D pellet modelling,

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(in collaboration with IPP).

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University of Thessaly, Department of Mechanical and Industrial Engineering, Volos (N. Vlachos, D. Valougeorgis, and N. Pelekasis), National Technical University of Athens, School of Electrical and Computer Engineering, Athens (K. Hizanidis) and University of Thessaloniki, Department of Physics, Thessaloniki (L. Vlahos):

Turbulence and transport phenomena, discrete kinetic and stochastic modelling, transport and chaos and MHD instabilities in fusion plasmas,

(in collaboration with ULB, IPP.CR, FOM, UU and IKET/FZK).

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University of Thrace, Department of Environmental Engineering, Xanthi (E. Evangelidis):

Energy transfer due to wave-particle interaction,

(in collaboration with JET).

The **Technology Programme** is performed exclusively at the:

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National Centre for Scientific Research “Demokritos”, Institute for Nuclear Technology and Radiation Protection, Athens (S. Messoloras):

Fracture micromechanisms of ceramic composites and joints under irradiation, brazing with thermomechanical testing,

(in collaboration with CEA).

1c) Outline of the 2006 Annual Report

The Physics, Underlying Technology and Technology work of the period 01 January to 31 December 2006 has been performed according to the work programme approved by the Steering Committee. It is presented, along with a brief outline of the corresponding background and objectives, in the following sections 2 (Physics) and 3 (Underlying Technology and Technology). For several of these activities, the work has reached a level of maturity, for which more extensive self-contained articles could be prepared, on the work completed in year 2006. These articles, 25 in all, are attached as Annexes to this Report, with appropriate reference made in the main body of the text.

Additional activities of the Association are presented in paragraph 4. They refer to the “Fifth School on Fusion Physics and Technology”, which took place in Volos (10 to 14 April 2006), to other fusion-related educational activities, to the web page of the Research Unit, to the workshop EC-14 organised by the Research Unit, to the expenditure, personnel, co-operations and mobility missions of the Association in year 2006, as well as to the publications that have appeared (or have been accepted) in year 2006.