

1. INTRODUCTION

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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 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" (Director: M. ANTONOPOULOS-DOMIS). 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). [kamagra brausetabletten](#) [viagra soft tabs](#) argaiv1135

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):

1. 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 (*in collaboration with IPP*).
2. National Technical University, School of Electrical and Computer Engineering (J. VOMVORIDIS) and University of Athens, Department of Physics (I. TIGELIS): high-power microwaves and plasma/electron beam instabilities, non-linear relativistic dynamics of charged particles, EM scattering (*in collaboration with CRPP and FZK*).
3. University of Ioannina, Department of Physics (G. N. THROUMOULOPOULOS): negative-energy perturbations related to non-linear (micro)instabilities, stationary MHD states in magnetically-confined plasmas (*in collaboration with IPP*).
4. FORTH, Institute of Electronic Structure and Lasers, Heraklion (P. LALOUSIS): vapour shield phenomena during hard disruptions, development of codes (*in collaboration with IPP and HAS*).
5. University of Thessaly, Department of Mechanical and Industrial Engineering (N. VLACHOS),

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6. National Technical University of Athens, School of Electrical and Computer Engineering (K. HITZANIDIS) and

7. University of Thessaloniki, Department of Physics (L. VLACHOS): MHD turbulent transport, stochastic modelling, transport and chaos and MHD instabilities in fusion plasmas (*in collaboration with ULB, IPP.CR, CEA and FOM*).

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*).

The Physics and the Technology work performed during the period 01 January to 12 December 2002 is outlined in the following paragraphs. For several activities, more extensive summaries of the work performed are appended as Annexes to this Report, with appropriate reference made in the main body of the text. Finally, in the Appendix, a list of publications is presented.