

List of projects

1.1 Projects Funded by E.U.

- 1.1.1** Development of Repair Methodology for Conventional Aircrafts using composite reinforcements. (Cooperation of H.A.I., Univ. of Athens, Democritus. Univ. of Thrace, Naval Aviation Depot Cherry Point, Deutsche Aerospace, 1996).
- 1.1.2** The dynamic crack model in earthquake source mechanics (11/09/1996 – 10/09/1997)
- 1.1.3** Pilot Study and Application of distance learning (teleducation) in CAD / CAM / CIM" (N.T.U.A, 1996 -1998)
- 1.1.4** Composite Repair of Metallic Structures for Aging Commercial Aircrafts". (N.T.U.A. , H.A.I., Univ. of Thrace, OGMA, ALENIA, IAI, CYTEC, GMI, (1999 - 2002).
- 1.1.5** Composite repair of metallic for aging commercial aircraft (02/01/1999 – 31/07/2002)
- 1.1.6** Educational for the Creation of a Multimedia System on the Subject of Training on Total Quality Management
- 1.1.7** Air Conformal Fiber Optic Ice Detection System - ACIDS" (Aerospace Composite Technologies Ltd, Hellenic Aerospace Industry SA Ltd, Cambridge Optical Sciences Ltd, University of Limerick, AOS Technology Ltd, Axon Tec Ltd, Eurocopter Deutschland GmbH Ltd, 2002-2006
- 1.1.8** Integrated Monitoring and Control System for the Repair Process of Aircraft Structures using bonded patches (NTUA, INASCO, GMI 2006 - 2008)
- 1.1.9** SENARIO – Advanced Sensors and Novel Concepts for Intelligent and Reliable Processing in Bonded Repairs(INASCO Hellas, Laser Zentrum Hannover, SENER, Generale Micro Informatique, Tel Aviv University, Israel Aircraft Industries, INASMET Fundacion, Bombardier Aerospace, Belfast, N.T.U.A., 2007 - 2010)
- 1.1.10** Inducer:Induction Heating and Health Monitoring Solutions for Smart Aircraft Maintenance using Adapted Composite Patches (Co-GMI, TWI, NTUA and Alenia Aeronautica, as Topic Manager, 2009-2011)
- 1.1.11** Portable Laser system for the Surface preparation of composite Repairs – P-LASER, (Co-GMI Aero, Laser Zentrum Hannover (LZH), Clean Laser Systems (CLS), N.T.U.A., 2009 - 2011)
- 1.1.12** Optimus: Optimization of Sensor Placement Methodology for Structural Health Monitoring (N.T.U.A., GMI and HAI, as Topic Manager, 01/01/2010 – 31/07/2010).
- 1.1.13** Examination of Practical Aspects of Innovative Bonded Composite Repair Techniques (N.T.U.A., GMI and Fraunhofer IFAM, as Topic Manager, 2010-2012)
- 1.1.14** Induction based Curing Tool for Optimized heating of composite Repairs (N.T.U.A., GMI and Fraunhofer IFAM, as Topic Manager, 2010-2012)
- 1.1.15** Comparative evaluation of NDT techniques for high-quality bonded composite repairs (NTUA, TWI, GMI and Fraunhofer IFAM, as Topic Manager, 2010-2012)

1.2 Funded by National Authorities

- 1.2.1** Construction of museum exhibits by composite polymeric materials. (01/01/1990 – 31/12/1994).
- 1.2.2** Application of Finite Element Method for the analysis of wound closure of local flaps. (01/09/1993 – 01/03/1995)
- 1.2.3** Calculation of equivalent stiffness of a wall (07/09/1993 – 06/09/1995)
- 1.2.4** Organization and Accreditation of the Laboratory of Strength of Materials of the National Technical University of Athens, according to standards EN 45001 or ISO 9001. (31/12/1997 – 30/03/2000).
- 1.2.5** Theoretical study of optical fiber sensors integration in composite patches and resulting effects on their mechanical behavior –Analysis of the mechanical-optical field (01/05/2000 – 30/04/2002).
- 1.2.6** Theoretical study of optical fiber sensors integration in composite patches and resulting effects on their mechanical behavior –Analysis of the mechanical-optical field (01/05/2000 – 30/04/2002).
- 1.2.7** Study of the behavior of piezoelectric materials (TEI Piraeus, N.T.U.A. 2004 - 2006).
- 1.2.8** Repair of Steel Structures with Fiber patches (TEI Athens, NTUA, 2004 - 2006).
- 1.2.9** Structural Health Monitoring of Materials using piezoelectric sensors (TEI Piraeus, NTUA, 2004 - 2006)
- 1.2.10** Influence of environmental factors in the repair of aerospace and shipbuilding structures with composite patches. Patch shape optimization (TEI of Athens, N.T.U.A., 2005 - 2007).
- 1.2.11** Influence of environmental factors in the repair of aerospace and shipbuilding structures with composite patches. Patch shape optimization (TEI of Athens, N.T.U.A., 2005 - 2007).
- 1.2.12** Development of computer code for the simulation of resin transfer in high strength fiber-reinforced molds (08/11/2004 – 31/12/2007)
- 1.2.13** Application of gradient elasticity theory for solving boundary value problems using analytical methods and mixed, adaptive finite elements (01/01/2005-31/12/2007).
- 1.2.14** Application of gradient elasticity theory for solving boundary value problems using analytical methods and mixed, adaptive finite elements (01/01/2005-31/12/2007).
- 1.2.15** Development of mixed and discontinuous finite element models for solving boundary value problems in materials with microstructure (non-local elasticity, gradient elasticity) (05/10/2008 – 04/10/2010).

1.3 Projects Funded by the Industry

- 1.3.1** Experimental Study of elevator brake systems (1991).
- 1.3.2** Experimental Study of elevator brake systems (01/10/1992 – 30/09/1993)

- 1.3.3** Experimental study of the influence of operating machinery on the structural elements of a building. (1992).
- 1.3.4** Experimental monitoring of 16 old parabolic bridges at the railway Bralos-Domokos 1993
- 1.3.5** Finite element analysis of the rudder trim tab of T-2E A/C in order to assess the possibility of fabrication using composite materials (H.A.I. 1994)
- 1.3.6** Structural equipment (30/05/1994 – 30/05/1996).
- 1.3.7** Mechanical properties of polyethylene pipes for natural gas distribution (10/01/1995 – 31/12/1996).
- 1.3.8** Experimental Study of elevator brake systems (31/12/1995 – 31/12/1996).
- 1.3.9** Finite Element Modeling of Aircraft structural components (01/03/2000 – 28/4/2001).
- 1.3.10** Optic fibers integration into composite patches for structural integrity monitoring of repaired aircraft structures. (01/11/2001 – 29/11/2004).
- 1.3.11** Mechanical response and suitability of advanced materials for aircraft
- 1.3.12** Development of novel polymer materials and integrated method for improvement of patch-repaired aerospace structures (11/11/2005 – 30/06/2009)
- 1.3.13** INCOBOND - Integrated monitoring and control system for a repair process of aircraft structures using bonded patches. (26/07/2006 – 25/10/2007).
- 1.3.14** Development of novel polymeric materials and integrated methodology to improve bonded aerospace structures (N.T.U.A. , GMI 2006 - 2008)
- 1.3.15** Framework program: computational mechanics and structural integrity (11/12/2007 – 10/07/2011).
- 1.3.16** Framework program: computational mechanics and structural integrity (23/10/2008 – 31/08/2011).

1.4 Co-funded by the Industry and National Authorities

- 1.4.1** Construction of museum exhibits by composite polymeric materials. (01/01/1990 – 31/12/1994).
- 1.4.2** Integrated planning for the vocational guidance and rehabilitation of women – “NOW” (01/04/1996 – 31/12/1996).
- 1.4.3** Organization and Accreditation of the Laboratory of Strength of Materials of the National Technical University of Athens, according to standards EN 45001 or ISO 9001. (31/12/1997 – 30/03/2000).
- 1.4.4** Regional bidirectional NTUA telework and teleducation centers (01/06/1998 – 30/06/2001).
- 1.4.5** NTUA’s bi-directional centers for e-learning and e-employment in Greek National Districts (01/06/1998 – 30/06/2001).
- 1.4.6** Development of repair methods for aging aircrafts using reinforced patches from Advanced Composite Materials (NTUA, DAC, LBB, Univ. of Patrai, 1999 - 2002).

- 1.4.7** Theoretical study of optical fiber sensors integration in composite patches and resulting effects on their mechanical behavior –Analysis of the mechanical-optical field. (N.T.U.A. 2000 - 2002).
- 1.4.8** Integration of optical fibers in composite patches for structural integrity monitoring of repaired aircraft structures (H.A.I. , N.T.U.A, 2001 - 2003).
- 1.4.9** Study on the mechanical and fatigue response of new materials for the design, construction, maintenance and repair of aircrafts, and development of an analytical-computational model (01/08/2001 – 29/11/2004).
- 1.4.10** Development of innovator polymeric materials and integrated optimization methodology of bonded aerospace structures. (11/11/2005 – 30/06/2009).
- 1.4.11** Development of a repair method for aged aircrafts, using reinforced patches from advanced composite materials (11/11/2005 – 30/06/2009).
- 1.4.12** Development and experimental verification of a computational model for the fatigue life cycle of notched structural elements, in order to upgrade the design, construction and repair of aircraft structures. (01/09/2006 – 31/12/2007).

1.5. Educational projects funded by EU and National Authorities

- 1.5.1** Computational structural engineering and automated architectural design
- 1.5.2** Computational structural engineering
- 1.5.3** Computational mechanics
- 1.5.4** Computational mechanics (28/10/1990 – 23/03/1991)
- 1.5.5** Automated architectural design. (01/09/1993 – 31/12/1995)
- 1.5.6** Training courses in computer aided design (01/11/1993 – 31/10/1993)
- 1.5.7** Linking universities and businesses. A study of implementation problems. (01/01/1995 – 31/12/1995)
- 1.5.8** Linking universities and businesses. Training courses for students and employees. (01/01/1995 – 31/12/1995)
- 1.5.9** Computational structural engineering and automated architectural design (07/09/1993 – 06/09/1995)
- 1.5.10** Pilot study and application of distance learning in CAD/CAM/CIM (E.U. 01/10/1995 – 31/12/1997)
- 1.5.11** Career Office for the graduates of NTUA (01/01/1996 – 31/12/1996)
- 1.5.12** Educational programs “YOUTHSTART” (E.U. 01/01/1996 – 31/12/1996)
- 1.5.13** Educational for the creation of a multimedia system on the subject of training on total quality management (E.U. 01/01/1996 – 31/12/1997)
- 1.5.14** Integrated planning for the vocational guidance and rehabilitation of women – “NOW” (01/04/1996 – 01/11/1997)

- 1.5.15** Hyperion-telematics services, certification and promotion of training (funded by E.U.) (01/04/1996 – 30/06/1998)Productive and enjoyable continued education (funded by E.U.) (01/05/1996 – 12/12/1996)
- 1.5.16** Distance learning for undergraduate students (01/10/1997 – 31/07/2000)
- 1.5.17** Multimedia and applications in second-grade education (13/10/1997 – 24/10/1997).
- 1.5.18** The Greek universities in the view of the new millennium (01/07/1998 – 31/05/2000).
- 1.5.19** Certification of informal education. Relations with the educational system (01/07/98 – 31/05/2000).
- 1.5.20** Abatement of distinctions in the labor market. Equal opportunities for women engineers and technicians (01/11/2002-31/12/2004).
- 1.5.21** Computational structural engineering
- 1.5.22** Abatement of distinctions in the labor market. Equal opportunities for women engineers and technicians (01/01/2005 – 31/03/2005).