

## CURRICULUM VITAE

Thanasis C. Triantafillou

Professor and Vice Chairman, Department of Civil Engineering  
 Director, Graduate Studies Program  
 Director, Structural Materials Laboratory  
 University of Patras, Patras GR-26500, Greece

Born in Patras, Greece, 1963

### EDUCATION

1987 – 1989 Massachusetts Institute of Technology, Ph.D. in Civil Engineering.  
 1985 – 1987 Massachusetts Institute of Technology, M.Sc. in Civil Engineering.  
 1980 – 1985 University of Patras, Greece, Diploma in Civil Engineering.

### ACADEMIC POSITIONS

1993 – Today Faculty Member, Department of Civil Engineering, University of Patras, Greece.

2005 – Today Adjunct Professor, Hellenic Open University, for the Thematic Unit “Seismic Design of Structures” of the program “Earthquake Engineering and Earthquake Resistant Structures”. Coordinator of the above Thematic Unit.

2005 – Today Member of the Faculty at the MEEES Program (Erasmus Mundus European Masters in Earthquake Engineering and Engineering Seismology).

2009 – Today Member of the Faculty Body at the ROSE School (Centre for Post-Graduate Training and Research in Earthquake Engineering and Engineering Seismology) in Pavia.

1990 – 1993 Assistant Professor, Department of Civil Engineering, Massachusetts Institute of Technology (MIT) (on leave during 1992, serving the Greek Air Force).

Summers of 1991 and 1990 Visiting Assistant Professor, Swiss Federal Laboratories for Materials Testing and Research (EMPA).

May 1989 – Jan. 1990 Postdoctoral Associate, Department of Civil Engineering, Massachusetts Institute of Technology (MIT).

1985 – 1989 Research Assistant, Department of Civil Engineering, Massachusetts Institute of Technology (MIT).

### OTHER PROFESSIONAL AND TECHNICAL EXPERIENCE

1994 – 2010 Principal designer or member of design teams for the strengthening of about 20 reinforced concrete and masonry structures.

2007 – 2009 Consultant to the *Georgia Tech Research Corporation* on the “Development of Guide Specification for Externally Bonded FRP Systems for Repair and Strengthening of Concrete Bridge Elements”.

2009 Consultant to *Arcelor Mittal Construction Hellas AE* for the “Commentary of Research Reports on the Flammability of Sandwich Panels”.

- 2008 Consultant to *Edrasi Ch. Psallidas ATE* for the “In-Situ Testing of Masonry Tunnel at the Diakopto-Kalavryta Railway Line”.
- 2008 Consultant to *S&P* for the Greek translation of the Software programs FRP Lamella and FRP Colonna.
- 2006 – 2009 External Evaluator of the European research project “High Performance Composites Bridges for Rapid Infrastructure Renewal” co-ordinated by *Acciona Infraestructuras, S.A.*
- 2008 Consultant to *AKTOR ATE* for the “Assessment of Damage in Reinforced Concrete Columns Subjected to Seismic Excitation Shortly after Casting”.
- 2005 – 2007 Consultant to *ENDICO* for the seismic retrofitting of four historic masonry structures in Iran.
- 2006 Consultant to *PROLAM* (in Canada) on “Development of Reinforcement System for Glulam Timber Beams using Fiber Reinforced Polymers”.
- 2004 Consultant to *Greek Association of Expanded Polystyrene Producers* on “Technical and Economic Investigation of Expanded Polystyrene for the External Thermal Insulation of Buildings”.
- 2003 Consultant to *ISOMAT ABEE* on “Investigation of the Mechanical Behaviour of MEGAWRAP and MEGAPLATE as Strengthening Materials”.
- 2002 Consultant to *West Greece Region* on “In-situ Testing of Concrete and Design of Repair Measures for the Center of Plant Protection and Quality Control”.
- 2002 Consultant to *ECOTURN ABEE* on “Behaviour of Polymeric Sandwich Panels as Moulding Materials”.
- 2001 – 2002 Consultant to *SIKA Finanz AG* on “Development of Software for the Dimensioning of RC Elements Strengthened with FRP Composites”.
- 2002 and 1997 Consultant to *AVEX* on “Investigation of Physical and Mechanical Properties of Glulam Timber within the Framework of Eurocode 5”.
- 2001 Consultant to *Halcrow* on “Strengthening of Nuclear Power Plants Using Advanced Composite Materials”.
- 1998 – 2001 Scientific Advisor to *ETANE-EFKLIDIS ATE* for the Brite/Euram research program “Monitoring of Large Civil Engineering Structures for Improved Maintenance - MILLENNIUM”.
- 2000 Consultant to *MOYSTAKIS AEE* on “Residual Material Strengths in the ‘Moustakis’ Building after fire”.
- 1999 – 2000 Scientific Advisor to *SIKA HELLAS* and *SINTECNO HELLAS* for the development of “Guidelines for the Dimensioning of Reinforced Concrete Elements Strengthened with Composite Materials”.
- 1995 – 1997 Consultant to the *Technical Chamber of Greece* on “Investigation of two Building Collapses during the Aegion Earthquake”.
- 1994 Consultant to *MIT* and *Bechtel Corporation* on “Investigation of the Deleterious Effects of Electro-Magnetic Fields (EMF) on Steel Rebars Used in Guideways for EDS MAGLEV Systems”.
- 1993 Consultant to *Eldim, Inc.* on “Analytical Models for Mechanical Properties of I Beam Honeycomb”.
- 1991 Consultant to *Norfield Corporation* on “Minimum Cost Design of Norcore Laminated Panels”.
- 1990 Consultant to *Amoco Production Co.* on “Repair Methods for Massive Concrete Foundations”.
- 1989 Consultant to *Martin Marietta* on “Development of Microballoon Reinforced Metal Matrix Composites”

### SOCIETY MEMBERSHIP

- American Society of Civil Engineers (ASCE)
- American Concrete Institute (ACI)
- fédération internationale du béton (*fib*)
- International Association for Bridge and Structural Engineering (IABSE)
- International Union of Testing and Research Laboratories for Materials and Structures (RILEM)
- International Institute for FRP in Construction (IIFC)
- Materials Research Society (MRS)
- Greek Scientific Society for Concrete Research
- Technical Chamber of Greece
- Greek Society of Civil Engineers

### COMMITTEE MEMBERSHIP

2008 – Present	<i>fib</i> Special Activity Group 5 “Model Code 2010”, Invited Expert.
2009 – Present	<i>fib</i> Special Activity Group 6 “Composite Concrete-Steel Structures”, Member.
1996 – Present	<i>fib</i> Commission 9, Task Group 9.3 “FRP Reinforcement for Concrete Structures”, Member, Convenor of Sub-Group on “Externally Bonded Reinforcement”.
2009 – Present	RILEM Technical Committee “Test Methods and Design of Textile Reinforced Concrete”, Member.
2007 – Present	RILEM Technical Committee “Masonry Strengthening with Composite Materials”, Member.
2003 – Present	International Institute for FRP in Construction, Member of the Council.
1993 – Present	American Concrete Institute Committee 440 “Fiber Reinforced Polymer Reinforcement”, Associate Member. Subcommittee 440-F (Repair), Member.
2003 – 2008	RILEM Technical Committee “Textile Reinforced Concrete”, Member.
2004 – 2008	RILEM Technical Committee “FRP-Concrete Bond in Structural Strengthening and Rehabilitation”, Member.
2000 – 2003	<i>fib</i> Commission 7, Task Group 7.1 “Assessment and Retrofit of Existing Structures”, Member.
1999 – 2002	IABSE Technical Committee, Working Group 23 on “Application of New Materials in Structural Engineering”, Member.
1991 – 1998	American Society of Civil Engineers - Materials Engineering Division, Technical Committee for Structural Composites and Plastics, Member.
1995 – 1998	COST C1 (Civil Engineering Structural Connections), Polymeric Composites Working Group 7 (EU-supported Committee), Member.
2005 – Present	Greek Scientific Society for Concrete Research, Member.
2004	Committee of Special Consultants to the Greek Earthquake Planning and Protection Organization on the “Code for Interventions on Existing Reinforced Concrete Buildings”, Member.
1995 – 1997	Technical Chamber of Greece: <ul style="list-style-type: none"> <li>- District Council of Technological Education</li> <li>- Committee on Continuing Education</li> </ul>

### AREAS OF SPECIALIZATION

- Application of advanced materials in structural engineering, with a focus on strengthening and seismic retrofitting of concrete, masonry and timber structures with advanced composites.

- Steel-concrete composite structures, prefabricated structural sandwich panels.
- Lightweight materials (concrete, cellular materials).

### AWARDS

1. IIFC (International Institute for FRP in Construction) Medal (2010).
2. Golden Mirko Roš Medal for life's work in the field of Materials and Engineering Science (2007), Swiss Federal Laboratories for Materials Testing and Research (EMPA).
3. Best Basic Research Paper Award in 2003, *ASCE Journal of Composites for Construction*, for the paper:  
Antonopoulos, C. P. and Triantafillou, T. C. (2003). "Experimental Investigation of FRP-Strengthened RC Beam-Column Joints", 7(1), 39-49.
4. Honorable Mention Applied Research Paper Award in 2002, *ASCE Journal of Composites for Construction*, for the paper:  
Bakis, C. E., Bank, L. C., Brown, V. L., Cosenza, E., Davalos, J. Lesko, J. J., Machida, A., Rizkalla, S. H., and Triantafillou, T. C. (in alphabetical order) (2002). "Fiber-Reinforced Polymer Composites for Construction – State-of-the-Art Review", 6(2), 73-87 (invited paper).
5. Best Research Paper Award in 1997, *ASCE Journal of Materials in Civil Engineering*, for the paper:  
Triantafillou, T. C. (1997). "Shear Reinforcement of Wood Using FRP Materials", 9(2), 65-69.
6. Fulbright Senior Research Award, 1996.

### OTHER HONORS

- fédération internationale du béton (*fib*), Deputy of the Greek Delegation, as of 2007.
- National Representative on behalf of the Hellenic General Secretariat for Research and Technology for the period 2004-2006, 6<sup>th</sup> Framework Programme of the European Commission, "Specific measures and actions regarding the 1<sup>st</sup> specific programme".
- International Liaison to the Project Advisory Committee of the ASCE project "Pre-Standard for Load Resistance Factor Design (LRFD) of Pultruded Fiber Reinforced Polymer (FRP) Structures", 2008-2010.
- *ASCE Journal of Composites for Construction*, Member of the International Editorial Board, as of 1999.
- *International Journal of Sustainable Materials and Structural Systems*, Member of the International Editorial Board, as of 2010.
- *International Review of Civil Engineering*, Member of the International Editorial Board, as of 2010.
- *ASCE Journal of Materials in Civil Engineering*, Guest Editor of Special Issue 13(2), Mar/Apr 2001. Editorial on "Fracture Mechanics in Concrete Repair/Strengthening".
- Bulletin of the Polytechnic Institute of Iasi, Section Construction and Architecture, Member of the International Editorial Board, since 2008.
- Organizer of the International Conference FRPRCS-8 (Fiber Reinforced Polymers in Reinforced Concrete Structures – 8) in 2007 (the Conference is organized every 2 years in America, Europe and Asia).
- Selected coordinator of the EC-funded research projects in the area of "Improved Performance of Concrete in Structures", within the framework of the program "Targeted Research Action - Environmentally Friendly Construction Technologies", carried out by the European Council for Construction Research, Development and Innovation, 1997 - 2001.
- Invited expert for the evaluation of research proposals in the European Commission (FP7, FP6, Growth, Brite/Euram), the USA (NSF), Italy (MURST - Italian Ministry of University and

Research), Hong Kong (Research Grants Council), Australia (Australian Research Council), Belgium (Fund for Scientific Research – Flanders), Portugal (Portuguese Foundation for Science and Technology), Israel (Israel Science Foundation), Research Foundation of Cyprus, Cariplo Foundation (Italy) and Greece (YPEPTH – EPEAEK).

- Co-ordinator of the 1<sup>st</sup> 2-day *fib* course on “Strengthening with Externally Bonded FRP Reinforcement – Behaviour, Design and Applications”, Divani Caravel, Athens, May 4-5, 2003.
- Workshops on International Research on Advanced Composites in Construction (IRACC 96, 97, 98, 99), Bologna, Sapporo, Naples, Cincinnati, Invited Delegate.
- Reviewer of 300 papers in 49 International Journals [*in ( ) the number of reviews*]:

ACI Materials Journal	(6)	International J. of Solids and Structures	(7)
ACI Special Publication	(6)	J. of Advanced Concrete Technology	(5)
ACI Structural Journal	(29)	J. of Bridge Engineering (ASCE)	(1)
Advanced Composites Letters	(16)	J. of Composites for Construction (ASCE)	(59)
Advances in Civil Engineering	(2)	J. of Composite Materials	(2)
Advances in Structural Engineering	(6)	J. of Composites Tech. and Research	(1)
Canadian Journal of Civil Engineering	(6)	Journal of Earthquake Engineering	(6)
Cement and Concrete Composites	(2)	J. of Engineering Mechanics (ASCE)	(3)
Composites Engineering	(1)	J. of Materials in Civil Engineering (ASCE)	(18)
Composites Part A: Appl. Sc. & Manufact.	(1)	Journal of Materials Science	(1)
Composites Part B: Engineering	(6)	J. of Mechanics of Materials and Structures	(1)
Composites Science & Technology	(5)	J. of Seismology and Earthquake Engineering	(1)
Composite Structures	(4)	Journal of Structural Engineering (ASCE)	(8)
Computers and Structures	(2)	Journal of Zhejiang University – Science A	(1)
Concrete International	(1)	Kuwait Journal of Science and Engineering	(1)
Construction and Building Materials	(3)	Materials and Structures (RILEM)	(17)
Construction Materials (ICE)	(1)	Philosophical Magazine A	(1)
Earthquakes and Structures	(1)	Research Letters in Materials Science	(1)
Engineering & Computational Mechanics	(1)	Steel and Composite Structures	(2)
Engineering Structures	(23)	Structural Concrete ( <i>fib</i> )	(13)
European Journal of Mechanics – A/Solids	(1)	Structural Engineering and Mechanics	(5)
Experimental Mechanics	(1)	Structural Engineering Intern. (IABSE)	(3)
Finite Elements in Analysis and Design	(1)	Structures and Buildings	(1)
International J. of Engineering	(1)	Technika Chronika	(15)
Int. J. of Mater. and Product Technology	(1)		

Reviewer of: ASTM STP 1323 “Composite Materials in Non-Aerospace Applications”.

- Reviewer of 2 book proposals to John Wiley & Sons.
- Session chairman, member of scientific committees and papers reviewer in 68 international and 8 national conferences (mainly in the field of advanced materials).
- More than 1350 citations.
- MIT Research and Teaching Assistantships, 1985-1989.
- Fulbright Scholarship, 1985.
- National Scholarship Foundation University Scholarships, 1981-1985.

## PUBLICATIONS

### (a) Books, Course Notes, Classnotes

- B1. Book: *Fiber-Reinforced Polymer Reinforcement for Concrete Structures*, Proceedings of the 8<sup>th</sup> International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures (FRPRCS-8), editor, University of Patras, 2007, 733 pages + CD with 311 papers.

- B2. Book: *Steel-Concrete Composite Structures*, University of Patras Press, 2005, 180 pages (in Greek).
- B3. Book: *Mechanics of Materials – Part I*, University of Patras Press, 2005, 130 pages (in Greek).
- B4. Book: *Mechanics of Materials – Part II*, University of Patras Press, 2005, 188 pages (in Greek).
- B5. Book: *Strengthening of Reinforced Concrete Structures with Composite Materials*, Papatotiriou Bookstores, 2003, 110 pages (in Greek). Includes CD with design software.
- B6. Book: *Steel-Concrete Composite Structures*, Hellenic Open University Program on Earthquake Engineering and Earthquake-Resistant Structures, 2003, 145 pages (in Greek).
- B7. Book: *Structural Materials*, 2004, 470 pages. Older editions: 2001, 455 pages. 1997, 430 pages (in Greek).
- B8. Book: *Advanced Materials and Structural Technologies*, University of Patras Press, 2003, 300 pages. Older edition: 1997, 205 pages (in Greek).
- C1. Author of Chapter 5.5 - *Non-Metallic Reinforcement* and Chapter 6.2 - *Bond of Non-Metallic Reinforcement* in the *fib* New Model Code 2010.
- C2. Co-author of Chapter 36 of the book “Advances in Performance-Based Earthquake Engineering” titled: Ch. 36 – *Innovative Seismic Retrofitting of RC Columns Using Advanced Composites* (12 p.), Springer, 2010, Edited by M. N. Fardis.
- C3. Co-author of Chapter 7 of the RILEM State-of-the-Art Report 36 “Textile Reinforced Concrete” titled: Ch. 7 – *TRC in Rehabilitation* (16 p.), 2006.
- C4. Chapter 1 of the *fib* Bulletin 35 “Retrofitting of Concrete Structures by Externally Bonded FRPs” titled: *General Concepts and Design Aspects – Materials and Techniques* (27 p.), 2006.
- C5. Co-author of Chapter 5 of the *fib* Bulletin 24 “Seismic Assessment and retrofit of reinforced concrete buildings” titled: *Seismic Retrofitting Techniques* (contribution: 12 p.), 2003.
- C6. Chapters 1, 2 and 5 of the *fib* Bulletin 14 “Externally Bonded FRP Reinforcement for RC Structures” titled: Ch. 1 – *Introduction* (5 p.), Ch. 2 – *FRP Strengthening Materials and Techniques* (15 p.), Ch. 5 – *Strengthening in Shear and Torsion* (10 p.), 2001.
- C7. Principal author of Chapters 4 and 9 of the *fib* Bulletin 14 “Externally Bonded FRP Reinforcement for RC Structures” titled: Ch. 4 – *Flexural Strengthening* (32 p.), Ch. 9 – *Special Design Considerations and Environmental Effects* (10 p.), 2001.
- C8. Secondary author of Chapters 3, 6 and 7 of the *fib* Bulletin 14 “Externally Bonded FRP Reinforcement for RC Structures” titled: Ch. 3 – *Basis of design and safety concept* (10 p.), Ch. 6 – *Confinement* (15 p.), Ch. 7 – *Detailing Rules*, 2001.
- C9. Chapter 15 of the special edition “Bauingenieur: München Massivbau 2000-Forschung, Entwicklungen und Anwendungen”. Title: *Strengthening of Masonry with FRP*, Springer Verlag, 2000, Edited by K. Zilch.
- C10. Chapter II-8 of the book “Sustainable Raw Materials”. Title: *Construction and Demolition Waste in Greece*, RILEM Report 22, RILEM Publications S.A.R.L., 2000, Edited by Ch.F. Hendriks and H. S. Pietersen.
- C11. Chapter 9 of the book “Failure Analysis of Industrial Composite Materials”. Title: *Composites as Strengthening Materials of Concrete Structures*, McGraw Hill, 2000, Edited by M. Gdoutos, K. Pilakoutas and C. Rodopoulos, 407-447.
- C12. Co-author (3/4 Sections) of Chapter 2 of the book “Assessment of Seismic Damage, Repair and Strengthening of Historic Structures”, Hellenic Open University Program on Earthquake Engineering and Earthquake-Resistant Structures. Title: *Materials and Methods of Construction in Old Manonry Structures*, 2004, 20 pages (in Greek).

- C13. Chapter 3 of the book “Assessment of Seismic Damage, Repair and Strengthening of Historic Structures”, Hellenic Open University Program on Earthquake Engineering and Earthquake-Resistant Structures. Title: *Elements of the Mechanics of Masonry*, 2004, 35 pages (in Greek).
- C14. Co-author (3/4 Sections) of Chapter 6 of the book “Assessment of Seismic Damage, Repair and Strengthening of Historic Structures”, Hellenic Open University Program on Earthquake Engineering and Earthquake-Resistant Structures. Title: *Intervention Measures and Redesign*, 2004, 35 pages (in Greek).
- C15. Chapter 6 of the book “State-of-the-Art Review on Design, Testing, Analysis and Applications of Polymeric Composite Connections”. Title: *FRP Connections with Other Materials*, European Commission EUR 18172 EN, 1998, Edited by J. T. Mottram and G. J. Turvey.
- CN1. Course notes: *FRP for Shear Strengthening and Confinement of Reinforced Concrete*, within the framework of the ERASMUS 12-day Intensive Programme “FRP Reinforcement for Concrete”, University of Gent, 2002.
- CN2. Course notes: *Mechanical Behavior of Construction Materials*, University of Patras, 2000, 75 pages (in Greek).
- CN3. Course notes: *Innovative Design of FRP Sections for Bridges*, University of Cambridge Program for Industry 3-day Short Course, Sept. 1995, 45 pages.
- CN4. Classnotes: *Behavior and Design of Steel Structures*, MIT 1990, 210 pages.

#### (b) Papers in Refereed Journals

1. Bournas, D. A. And Triantafillou, T. C. (2010). “Bar Buckling in RC Columns Confined with Composite Materials”, *ASCE Journal of Structural Engineering*, submitted.
2. Papanicolaou, C., Triantafillou, T. C. and Lekka, M. (2010). “Externally Bonded Grids as Strengthening and Seismic Retrofitting Materials of Masonry”, *Construction and Building Materials*, submitted.
3. Bournas, T. C. and Triantafillou, T. C. (2010). “Bond Strength of Lap Spliced Bars in Concrete Confined with Composite Jackets”, *ASCE Journal of Composites for Construction*, accepted.
4. Bournas, D. A., Triantafillou, T. C., Zygouris, K. and Stavropoulos, F. (2009). “Textile-Reinforced Mortar (TRM) versus FRP Jacketing in RC Columns with Deformed Continuous or Lap-Spliced Bars”, *ASCE Journal of Composites for Construction*, 13(5), 360-371.
5. Bournas, D. A. and Triantafillou, T. C. (2009). “Flexural Strengthening of RC Columns with NSM FRP or Stainless Steel”, *ACI Structural Journal*, 106(4), 495-505.
6. Papanicolaou, C. G., Triantafillou, T. C., Papathanasiou, M. and Karlos, K. (2008). “Textile Reinforced Mortar (TRM) versus FRP as Strengthening Material of URM Walls: Out-of-plane Cyclic Loading”, *Materials and Structures, RILEM*, 41(1), 143-157.
7. Bournas, D., Lontou, P., Papanicolaou, C. G. and Triantafillou, T. C. (2007). “Textile-Reinforced Mortar (TRM) versus FRP Confinement in Reinforced Concrete Columns”, *ACI Structural Journal*, 104(6), 740-748.
8. Papanicolaou, C. G., Triantafillou, T. C., Karlos, K. and Papathanasiou, M. (2007). “Textile Reinforced Mortar (TRM) versus FRP as Strengthening Material of URM Walls: In-plane Cyclic Loading”, *Materials and Structures, RILEM*, 40(10), 1081-1097.
9. Triantafillou, T. C. and Papanicolaou, C. G. (2006). “Shear Strengthening of RC Members with Textile Reinforced Mortar (TRM) Jackets”, *Materials and Structures, RILEM*, 39(1), 85-93.
10. Triantafillou, T. C., Papanicolaou, C. G., Zisimopoulos, P. and Laourdekis, T. (2006). “Concrete Confinement with Textile Reinforced Mortar (TRM) Jackets”, *ACI Structural Journal*, 103(1), 28-37.
11. Gebremichael, Y. M., Li, W., Meggitt, B. T., Boyle, W. J. O., Grattan, K. T. V., McKinley, B., Boswell, L. F., Aarnes, K. A., Aasen, S. E., Tynes, B., Fonjallaz, Y. and Triantafillou, T. (2005).

- “A Field Deployable, Multiplexed Bragg Grating Sensor System used in Extensive Highway Bridge Monitoring Evaluation Tests”, *IEEE Sensors Journal*, 5(3), 510-519.
12. Karantzikis, M., Papanicolaou, C. G., Antonopoulos, C. and Triantafillou, T. C. (2005). “Experimental Investigation of Non-Conventional Confinement for Concrete using FRP”, *Journal of Composites for Construction, ASCE*, 9(6), 480-487.
  13. Krevaikas, T. D. and Triantafillou, T. C. (2005). “Masonry Confinement with Fiber Reinforced Polymers”, *Journal of Composites for Construction, ASCE*, 9(2), 128-135.
  14. Krevaikas, T. D. and Triantafillou, T. C. (2005). “Computer-aided Strengthening of Masonry Walls using Fibre-Reinforced Polymer Strips”, *Materials and Structures, RILEM*, 38, 93-98.
  15. Bousias, S. N., Triantafillou, T. C., Fardis, M. N., Spathis, L. and O’Regan, B. (2004). “FRP Retrofitting of Rectangular RC Columns with or without Corrosion”, *ACI Structural Journal*, 101(4), 512-520.
  16. Papanicolaou, C. G. and Triantafillou, T. C. (2004) “Analysis and Minimum Cost Design of Concrete Sandwich Panels Under Out-of-Plane Loading”, *Structural Concrete (Journal of the fib)*, 5(1), 11-27.
  17. Antonopoulos, C. P. and Triantafillou, T. C. (2003) “Experimental Investigation of FRP-Strengthened RC Beam-Column Joints”, *Journal of Composites for Construction, ASCE*, 7(1), 39-49. *Best Basic Research Paper (in 2003) Award*.
  18. Papanicolaou, C. G. and Triantafillou, T. C. (2002) “Minimum Cost Design of Concrete Sandwich Panels made of HPC Faces and Pumice Aggregate Concrete Core: The Case of In-Plane Loading”, *Structural Concrete (Journal of the fib)*, 3(4), 167-181.
  19. Papanicolaou, C. G. and Triantafillou, T. C. (2002) “Shear Transfer along Pumice Aggregate Concrete and HPC Interfaces”, *Materials and Structures, RILEM*, 35, 237-245.
  20. Bakis, C. E., Bank, L. C., Brown, V. L., Cosenza, E., Davalos, J. Lesko, J. J., Machida, A., Rizkalla, S. H., and Triantafillou, T. C. (in alphabetical order) (2002) “Fiber-Reinforced Polymer Composites for Construction – State-of-the-Art Review”, *Journal of Composites for Construction, ASCE*, 6(2), 73-87 (invited). *Honorable Mention Applied Research Paper (in 2002) Award*.
  21. Antonopoulos, C. P. and Triantafillou, T. C. (2002) “Analysis of FRP-Strengthened RC Beam-Column Joints”, *Journal of Composites for Construction, ASCE*, 6(1), 41-51.
  22. Triantafillou, T. C. (2001) “Seismic Retrofitting of Structures Using FRPs”, *Progress in Structural Engineering and Materials*, 3(1), 57-65 (invited).
  23. Triantafillou, T. C. and Antonopoulos, C. P. (2000) “Design of Concrete Flexural Members Strengthened in Shear with FRP”, *Journal of Composites for Construction, ASCE*, 4(4), 198-205.
  24. Triantafillou, T. C. (1998) “Composites: A New Possibility for Shear Strengthening of Concrete, Masonry and Wood”, *Composites Science and Technology*, 58(8), 1285-1295 (invited).
  25. Triantafillou, T. C. (1998) “Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates”, *Journal of Composites for Construction, ASCE*, 2(2), 96-104.
  26. Triantafillou, T. C. (1998) “Shear Strengthening of Reinforced Concrete Beams Using Epoxy-Bonded FRP Composites”, *ACI Structural Journal*, 95(2), 107-115.
  27. Triantafillou, T. C. (1997) “Strengthening of Structures with Advanced FRPs”, *Progress in Structural Engineering and Materials*, 1(2), 126-134 (invited).
  28. Triantafillou, T. C. (1997) “Shear Reinforcement of Wood Using FRP Materials”, *Journal of Materials in Civil Engineering, ASCE*, 9(2), 65-69. *Best Research Paper (in 1997) Award*.
  29. Triantafillou, T. C. and Fardis, M. N. (1997) “Strengthening of Historic Masonry Structures with Composite Materials”, *Materials and Structures, RILEM*, 30, 486-496.
  30. Maravegias, S. and Triantafillou, T. C. (1996) “Numerical Study of Anchors for Composite Prestressing Straps”, *Composite Structures*, 35(3), 323-330.
  31. Deskovic, N., Triantafillou, T. C. and Meier, U. (1995) “Innovative Design of FRP Combined with Concrete: Short-Term Behavior”, *Journal of Structural Engineering, ASCE*, 121(7), 1069-1078.
  32. Deskovic, N., Meier, U. and Triantafillou, T. C. (1995) “Innovative Design of FRP Combined with Concrete: Long-Term Behavior”, *Journal of Structural Engineering, ASCE*, 121(7), 1079-1089.



33. Plevris, N., Triantafillou, T. C. and Veneziano, D. (1995) "Reliability of RC Members Strengthened with CFRP Laminates", *Journal of Structural Engineering, ASCE*, 121(7), 1037-1044.
34. Plevris, N. and Triantafillou, T. C. (1995) "Creep Behavior of FRP-Reinforced Wood Members", *Journal of Structural Engineering, ASCE*, 121(2), 174-186.
35. Plevris, N. and Triantafillou, T. C. (1994) "Time-dependent Behavior of RC Members Strengthened with FRP Laminates", *Journal of Structural Engineering, ASCE*, 120(3), 1016-1042.
36. Kaneko, Y., Connor, J. J., Triantafillou, T. C. and Leung, C. K. (1993) "Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory", *Journal of Engineering Mechanics, ASCE*, 119(4), 681-700.
37. Kaneko, Y., Connor, J. J., Triantafillou, T. C. and Leung, C. K. (1993) "Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification", *Journal of Engineering Mechanics, ASCE*, 119(4), 701-719.
38. Adrian, C. A. and Triantafillou, T. C. (1992) "Creep and Shrinkage Analysis of Composite Systems Under Axial Load and Biaxial Bending", *Materials and Structures, RILEM*, 25, 543-551.
39. Plevris, N. and Triantafillou, T. C. (1992) "FRP-Reinforced Wood as Structural Material", *Journal of Materials in Civil Engineering, ASCE*, 4(3), 300-317.
40. Triantafillou, T. C. and Deskovic, N. (1992) "Prestressed FRP Sheets as External Reinforcement of Wood Members", *Journal of Structural Engineering, ASCE*, 118(5), 1270-1284.
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2. Triantafillou, T. C. (2009) “Composite Materials and Concrete”, 16<sup>th</sup> Greek Concrete Conference, Cyprus, Oct. 21-23.
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4. Triantafillou, T. C. and Bournas, D. A. (2008) “Innovative Seismic Upgrading of RC Columns in Flexure with NSM Reinforcement and Textile-based Jacketing”, 4<sup>th</sup> International Conference on FRP Composites in Civil Engineering, Zurich, Switzerland, July 22-24.
5. Triantafillou, T. C. (2007) “Textile-Reinforced Mortars (TRM) versus Fibre-Reinforced Polymers (FRP) as Strengthening and Seismic Retrofitting Materials for Reinforced Concrete and Masonry Structures”, *International Conference on Advanced Composites in Construction (ACIC07)*, University of Bath, April 2-4.
6. Triantafillou, T. C. (2005) “Recent Developments in Strengthening of Concrete Structures with Advanced Composites: Textile Reinforced Mortar Jacketing”, 4<sup>th</sup> Middle East Conference on the Use of Structural Composites in Infrastructure Applications – MESC-4, Alexandria, Egypt, May 21-23.
7. Triantafillou, T. C. (2004) “Upgrading Concrete Structures using Advanced Polymer Composites”, 2<sup>nd</sup> International Conference on Advanced Polymer Composites for Structural Applications in Construction, University of Surrey, April 20-22.
8. Triantafillou, T. C. (1998) “Fracture Mechanics Approaches to Concrete Strengthening Using FRP Materials”, 3<sup>rd</sup> International Conference on Fracture Mechanics of Concrete and Concrete Structures, Gifu, Japan, Oct. 12-16.

**(e) Papers in Conference Proceedings**

1. Antonopoulos, K. P., Grammenou, T. D. and Triantafillou, T. C. (2010) “Load Bearing Capacity of Masonry using the Flat Jack Technique - Case Studies in Greece”, 7<sup>th</sup> Greek National Conference on Non Destructive Testing, Athens, October 15-17 (in Greek).
2. Bournas, D. A. and Triantafillou, T. C. (2010) “Effect of Composite Material Confinement on Bond Strength Between Lap-Spliced Bars and Concrete”, 3<sup>rd</sup> fib Congress, Washington, May 29 – June 2.
3. Papanicolaou, C. G. and Triantafillou, T. C. (2009) “Innovative Strengthening of the Building Heritage using Textile-based Composites”, *International Symposium REHABEND 2009*, Bilbao, Spain, Oct. 26-29.
4. Bournas, D. A. and Triantafillou, T. C. (2009) “Strengthening of Reinforced Concrete Columns in Cyclic Flexure with Near-Surface Mounted Reinforcement”, 16<sup>th</sup> Greek Concrete Conference, Cyprus, Oct. 21-23 (in Greek).

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11. Bournas, D. A., Triantafillou, T. C. and Papanicolaou, C. G. (2009) “Retrofit of Seismically Deficient Columns with Textile Reinforced Mortar (TRM) Jackets”, *4<sup>th</sup> Colloquium on Textile Reinforced Structures (CTRS4)*, Dresden, June 3-5.
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2. Triantafillou, T. C. (2008) "Textile-Reinforced and Polymer-Modified Mortars: A New Generation of Composite Materials for Strengthening and Seismic Retrofitting of Structures",

- Proc. of International Workshop *Polymeric and Composite Materials: A Vision for the Future*, organized by IMAST, Capri, 26-27 Sept.
3. Triantafillou, T. C. (2004) "On the Use of Advanced Composites as Strengthening Materials of Historic Masonry, Timber, Metal and Concrete Structures", Proc. of International Workshop *Preservation of Historic Structures with Composites*, Lecce, June 9-10.
  4. Triantafillou, T. C. and Matthys, S. (2001) "Flexural Strengthening with Externally Bonded FRP Reinforcement", Proc. of International Workshop on *Composites in Construction – A Reality*, joint ASCE-ACI publication, edited by E. Cosenza, G. Manfredi and A. Nanni, Capri, July 20-21.
  5. Matthys, S. and Triantafillou, T. C. (2001) "Shear and Torsion Strengthening with Externally Bonded FRP Reinforcement", Proc. of International Workshop on *Composites in Construction – A Reality*, joint ASCE-ACI publication, edited by E. Cosenza, G. Manfredi and A. Nanni, Capri, July 20-21.
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4. Triantafillou, T. C. and Papanicolaou, C. G. (2008) Contribution of the University of Patras to the 2<sup>nd</sup> Annual Report of the project I-SSB (FP6 NMP2-CT-2006-026661).
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10. Triantafillou, T. C. (2007) *Assessment of Seismic Vulnerability for Existing Buildings and Development of Advanced Materials and Strengthening Techniques*, Final Report to the Hellenic GSRT for the project ARISTION (in Greek).



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27. Triantafillou, T. C. (2002) *Analytical Study of ECOTURN Sandwich Panels*, Report to ECOTURN ABEE.
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29. Triantafillou, T. C. and Papanicolaou, C. G. (2002) Contribution of the University of Patras to the 1<sup>st</sup> Annual Report of the project SAFEFLOOR (FP5 EVK4-CT2000-00020).
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76. Plevris, N. and Triantafillou, T. C. (1991) *Strengthening and/or Reinforcing Concrete and Wood Structures with Advanced Composites*, Research Report R91-04, Dept. of Civ. Engrg., MIT, Cambridge, MA.
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#### **PRINCIPAL INVESTIGATOR OF RESEARCH PROJECTS**

1. *The Integrated Safe and Smart Built Concept, I-SSB*  
IP, European Commission, 6<sup>th</sup> Framework Programme  
2007-2010, 121.000 €(for the Univ. of Patras)

2. *Open and Fully Compatible Next Generation Strengthening System for the Rehabilitation of the Mediterranean Building Heritage, OPERHA*  
STREP, European Commission, 6<sup>th</sup> Framework Programme  
2005-2008, 271.650 €(for the Univ. of Patras)
3. *European Network for Composite Reinforcement, EN-CORE*  
Marie Curie Research Training Network, European Commission, 6<sup>th</sup> Framework Programme,  
2005-2008, 148.386,50 €(for the Univ. of Patras)
4. *Assessment of Seismic Vulnerability for Existing Buildings and Development of Advanced Strengthening Materials and Techniques, ARISTION*  
Funded by the Hellenic General Secretariat for Research and Technology (in the framework of EPAN 2002), 2003-2006, Total Budget 1.875.000 €, 222.360 €(for the Univ. of Patras)
5. *Concrete Repair Network, ConRepNet*  
Thematic Network, European Commission, 5<sup>th</sup> Framework Programme, 2001-2005, 7.200 €(for the Univ. of Patras)
6. *Low Risk and Totally Recyclable Structural Buildings, SAFEFLOOR*  
European Commission, 5<sup>th</sup> Framework Progr., 2001-2004, 221.340 €(for the Univ. of Patras)
7. *Development and Diffusion of Design Guidelines for Strengthening of Structures with Composite Materials*  
Funded by the Earthquake Planning & Protection Organisation, 2000-2003, 73.367,57 € (29.344,77 €for the Univ. of Patras)
8. *Fiber Reinforced Polymers as Strengthening Materials of Reinforced Concrete Structures*  
Funded by the Hellenic General Secretariat for Research and Technology (in the framework of PENED 1999), 2000-2001. Collaboration with the Democritus Univ. of Thrace (co-ordinator).
8. *Use of Recycled Materials as Aggregates in the Construction Industry*  
Thematic Network funded by the Eur. Commission, 1998-2001, 13.102 €(for the Univ. of Patras)
9. *Systematic Study of New Strengthening Technique for Reinforced Concrete Elements Using Advanced Composite Materials*  
Funded by the Research Committee of the University of Patras (within the framework of the program K. KARATHEODORIS), 1998-2001, 17.608,22 €
10. *Development of Guidelines for the Design of Concrete Structures Reinforced, Prestressed or Strengthened With Advanced Composites*  
TMR Research Network funded by the European Commission, 1997-2001, 142.316,65 €(for the Univ. of Patras)
11. *Applied Research on the Mechanical Properties of Structural Timber*  
Funded by Sakelariou Panagiotis EPE, 2000, 3.961,85 €
12. *Fracture Toughness of Fibre-Reinforced Concrete Beams*  
Funded by the Hellenic Centre of Cement Research, 2000, 5.429,20 €
13. *Analysis and Design of Reinforced Concrete Members Strengthened with Carbodur and Sikawrap*  
Funded by SIKA Hellas, 1999, 5.165,08 €
14. *Development and Pilot Application of Novel Strengthening/Reinforcement Technique for Masonry Structures using Composite (FRP) Materials*  
Funded by the Hellenic General Secretariat for Research and Techn., 1997-1999, 43.433,60 €
15. *Development of Novel Structural System Based on Reinforced Glulam Timber*  
Funded by the Hellenic General Secretariat for Research and Techn., 1997-1999, 28.804,11 €
16. *Improved Design Criteria for Bolted Connections*  
Funded by INASCO Hellas (within the framework of BRITE-EURAM BE95-1780), 1997-1999, 12.032,28 €
17. *Mechanical and Thermal Behaviour of Expanded Polystyrene Foam*  
Funded by UNISOL, 1998, 1.614,09 €
18. *Mechanical Behavior of Steel-Concrete Composite Slabs*  
Funded by KONTI ABEE, 1997, 1.467,35 €

19. *Strengthening of Concrete and Wood Structures in Shear Using FRP (REPLARK System)*  
Funded by SUMITOMO Corporation Hellas S.A. and Mitsubishi Chemical Corporation, 1996-1997, 8.804,11 €
20. *Preservation of the Cultural Heritage of the Center and the Old City of Patras after the July 1993 Earthquake*  
Funded by the Hellenic Ministry of Education and Religion, 1994-1995, 4.402,05 €
21. *Innovative Strengthening Techniques with Composite Materials*  
Funded by the USA National Science Foundation, 1991-1993, \$100.000
22. *Innovative Design of FRP Composite Members Combined with Concrete*  
Funded by the EMPA (Swiss Federal Laboratories for Materials Testing and Research), 1991-1992, \$75.000
23. *Low Cost Guideways for Maglev (Principal co-investigator)*  
Funded by the USA Department of Transportation, Federal Railroad Administration, 1991-1992, \$120.000
24. *Prestressing of Concrete and Wood Structures with Composite Laminates*  
Funded by the EMPA (Swiss Federal Laboratories for Materials Testing and Research), 1990, \$25.000
25. *Use of Advanced Composites in Structural Engineering*  
Funded by the MIT Sloan Fund, 1990-1992, \$50.000
26. *Advanced Fiber-Reinforced Polymer Composite Materials in the Rehabilitation of Structures*  
Funded by the USA Army Research Office, 1990-1992, \$170.000