

## CURRICULUM VITAE

<b>Name</b>	Dimitrios E. Tzanetis
<b>Title</b>	Emeritus Professor
<b>Date and Place of Birth</b>	20 May 1949, Athens
<b>Nationality</b>	Greek
<b>Home Address</b>	12 Miaouli st., 152 35 Brilissia, Greece
<b>Professional Address</b>	Department of Mathematics, School of Applied Mathematical and Physical Sciences, National Technical University of Athens (NTUA), 157 80 Zografou Campus, Athens, Greece Tel.: +30-210- 772 1756

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### **PERSONAL SUMMARY**

I am now an Emeritus Professor in the School of Applied Mathematical and Physical Sciences, one of the top technical University in Greece, with 37 years of service in the Department. Following my graduation from the School of Mathematics in Aristotle University of Thessaloniki in 1975. I started as a Tutor in 1976 in NTUA. I completed my PhD thesis in 1986 at Heriot-Watt University under the supervision of Prof. Andrew Lacey. My research interests focus within the area of partial differential equations and mathematical modelling, and have about 30 publications in Journals (including PhD thesis), about 14 in mathematical series and monographs. I have participated in over 35 conferences (national and international) and have been invited as a speaker in 6. My work has been referenced more than 150 times in papers and 18 times in books and I have also been a referee and reviewer in various papers within my field. Additionally, I supervised 5 PhD, 2 MSc and about 70 undergraduate students (diploma thesis). Lastly, I have been awarded 6 times with research grants.

### **POSITIONS**

**Permanent in NTUA.** 1976 - 1986 Teaching Assistant, 1986 - 1995 Lecturer, 1995 - 2002 Assistant Professor, 2002 - 2010 Associate Professor, 2010 - 2013 Professor, 2013 - today Emeritus Professor.

#### **Visitor**

1. Department of Mathematics, Heriot-Watt University, Edinburgh, Scotland (June 1986, January 1987, May 1989, August 1990 kai 1994, Jule 1996).
2. Department of Mathematics, Universidad Complutense, Madrid, Spain, (January – June 1996).
3. Department of Mathematics, Osaka University, Japan, (October 2006 – February 2007).

## **I. UNIVERSITY EDUCATION**

**a)** Diploma in Mathematics, Department of Mathematics, Aristotle University of Thessaloniki, Greece, (1968-1973).

**b)** Ph.D. in Mathematics, Heriot-Watt University, Edinburgh, U.K., (1983-1986). Thesis entitled: "Global existence and asymptotic behaviour of unbounded solutions for the semilinear heat equation". Supervisor: Prof. A. A. Lacey.

## **II. RESEARCH INTERESTS**

Partial Differential Equations (Parabolic and Hyperbolic type initial-boundary value problems; Elliptic boundary value problems; Local and Non-local problems). Ordinary Differential Equations, (Population dynamics, Delay equations). Mathematical Modelling. Asymptotic Analysis.

## **III. TEACHING EXPERIENCE**

### **▪ Undergraduate Courses**

Linear Algebra, Advanced Calculus, Complex Analysis, Ordinary & Partial Differential Equations, Calculus of Variations, Mathematical Modelling.

### **▪ Graduate Courses**

Partial Differential Equations, Asymptotic Analysis and Perturbation Theory.

## **IV. THESES and POST DOCTORATE SUPERVISION**

### **▪ Post Doctorate Research Supervision**

1. Nikolopoulos C. V., Research post doctorate programme (State Scholarships Foundation), "Blow-up of solutions, Free boundary problems, Population dynamics", (11/1999-12/2000).

2. Kavallaris N. I., Research post doctorate programme (State Scholarships Foundation), "Blow-up, estimates and global existence of solutions of some non-local Ohmic heating type problems", (1/1/2005-30/6/2006).

### **▪ PhD Theses Supervision**

1. Vlamos P. M., "Blow-up and asymptotic behaviour of solutions of nonlocal Ohmic heating type problems", 1997.

2. Kavallaris N. I., "Blow-up and global existence of solutions of some nonlocal Ohmic heating type problems", 2000.

3. Latos E. A., "Mathematical Analysis and blow-up of solutions of local and non-local problems for partial differential equations", 2010.

4. Politikos D. B., "Mathematical modelling and population dynamics of the marine ecosystems", 2010.

5. Dogas D. A., "Blow-up of solutions for non-local and degenerate filtration and porous media problems" 2015.

### **▪ MSc Theses Supervision**

1. Kotsikas M., "Navier-Stokes equations", School of Applied Mathematics, National Technical University of Athens, October 2005.

2. Dogas D. A., "Periodic differential equations and applications", School of Naval Engineering, National Technical University of Athens, October 2006.

### **▪ Undergraduate Diploma Theses Supervision**

(I mention some of them, 28 of about 70)

1. Vogiatzaki K., "Mathematical modelling in the spread of technological

- innovation and in the problems with time delay", School of Applied Mathematics, National University of Athens, 2004.
2. Anthrakides G., "Mathematical modelling in population dynamics", School of Applied Mathematics, National University of Athens, 2004.
  3. Gkeka P., "Mathematical modelling in population dynamics and in biology", School of Applied Mathematics, NTUA, 2004.
  4. Papatheodosiou G., "Mathematical analysis of competitive population models", School of Applied Mathematics, NTUA, 2005.
  5. Sitra A., "Mathematical modelling of the mechanical oscillations and in the mooring of vessels", School of Applied Mathematics, NTUA, 2005.
  6. Liapis E., "The history of the calculus of variations and applications", School of Applied Mathematics, National University of Athens, 2005.
  7. Katsouleas G., "Integral transformations and applications in various problems of differential equations", School of Applied Mathematics, National University of Athens, 2005.
  8. Geroulis S., "Conformal transformation and applications in solving boundary value problems", School of Applied Mathematics, NTUA, 2005.
  9. Dimitrantzou C., "Population dynamics of contagious diseases", School of Applied Mathematics, National University of Athens, 2005.
  10. Papaspyrou A., "Partial differential equations of parabolic type and applications", School of Applied Mathematics, NTUA, 2005.
  11. Chrysanthou E., "Mathematical modelling of food heating process techniques", School of Applied Mathematics, NTUA, 2005.
  12. Zacharidou Z., "Mathematical modelling for housing allocation of homeless populations and tourist movements", School of Applied Mathematics, National University of Athens, 2006.
  13. Papadopoulos I., "Mathematical modelling in physical sciences, biology and economics", School of Applied Mathematics, NTUA, 2006.
  14. Koutsampasi P., "Dimensional analysis, scaling and mathematical modelling", School of Applied Mathematics, NTUA, 2006.
  15. Stavroulakis S., "Mathematical modelling techniques and applications in mechanical systems", School of Applied Mathematics, NTUA, 2007.
  16. Papadimitroula I., "Mathematical modelling in reaction diffusion phenomena and surface heating of materials", School of Applied Mathematics, National University of Athens, 2005.
  17. Dimitriou A., "Mathematical modelling in vehicles traffic flow", School of Applied Mathematics, National University of Athens, 2005.
  18. Paleokaritis T., "Mathematical modelling in competitive population systems", School of Applied Mathematics, NTUA, 2005.
  19. Dioleti M., "Mathematical modelling in problem in medicine, chemistry and biology", School of Applied Mathematics, NTUA, 2005.
  20. Dima M., "Mathematical study of the blow-up of solutions of differential equations", School of Applied Mathematics, NTUA, 2005.
  21. Sioutas T., "Mathematical models in Biophysics", School of Applied Mathematics, National University of Athens, 2006.
  22. Andreou P., "Mathematical modelling in problems in biology and chemistry", School of Applied Mathematics, NTUA, 2006.
  23. Mitropoulos K., "Perturbation theory and some of its applications in differential equations", School of Applied Mathematics, NTUA, 2004.

24. Boutrakis S., "Green functions and some applications in solving boundary value problems", School of Applied Mathematics, NTUA, 2005.
25. Kavouras M., "Maximum - minimum principle in differential equations", School of Applied Mathematics, National University of Athens, 2005.
26. Zachou T., "History of differential equations for the 18th and 19th century", School of Applied Mathematics, NTUA, 2006.
27. Sakkas V., "Mathematical modelling and study of population dynamics problems", School of Applied Mathematics, NTUA, 2009.
28. Konstantopoulou N., "Green functions and boundary value problems", School of Applied Mathematics, National University of Athens, 2009.

## V. PUBLICATIONS

### □ **Doctoral Thesis**

1. Tzanetis D. E., "Global existence and asymptotic behaviour of unbounded solutions for the semilinear heat equation", Ph. D. Thesis, Heriot-Watt University, Edinburgh, May 1986.

### □ **Publications in Refereed Journal**

2. Lacey A. A. and Tzanetis D. E., "Global existence and convergence to a singular steady state for a semilinear heat equation", *Proceedings of the Royal Society of Edinburgh*, 105A, 289-305, (1987).
3. Lacey A. A., Tzanetis D. E., "Complete Blow-Up for a semilinear diffusion equation with a sufficiently large initial condition", *IMA Journal of Applied Mathematics*, 41, 207-215, (1988).
4. Lacey A. A., Tzanetis D. E., "Global, Unbounded Solutions to a Parabolic Equation", *Journal of Differential Equations*, 101, 80-102, (1993).
5. Tzanetis D. E., "Asymptotic behaviour and blow-up of some unbounded solutions for a semilinear heat equation", *Proceedings of the Edinburgh Mathematical Society*, 39, 81-96, (1996).
6. Lacey A. A., Tzanetis D. E. and Vlamos P. M., "Behaviour of a non-local reactive convective problem modelling Ohmic heating of foods", *Quarterly Journal of Mechanics and Applied Mathematics*, 52, (4), (1999), 623-644.
7. Tzanetis D. E., Vlamos P. M., "A non-local problem modelling Ohmic heating with variable thermal conductivity", *Nonlinear Analysis: Real World Applications*, (2001), 2, 443-454.
8. Tzanetis D. E. and Vlamos P. M., "Some interesting special cases of a nonlocal problem modelling Ohmic heating with variable thermal conductivity", *Proceedings of the Edinburgh Mathematical Society*, 44, (2001), 585-595.
9. Kavallaris N. I., Tzanetis D. E., "Blow-up and stability of a non-local diffusion-convection problem arising in Ohmic heating of foods", *Differential and Integral Equations*, Vol. 15, N. 3, (2002), 271-288.
10. Kavallaris N. I., Nikolopoulos C.V. and Tzanetis D. E., "Estimates of blowup time for a non-local problem modelling an Ohmic heating process", *European Journal of Applied Mathematics*, (2002) , Vol. 13 pp. 337-351.
11. Tzanetis D. E., "Blow-up of radially symmetric solutions of a non-local problem modelling Ohmic heating", *Electronic Journal of Differential Equations*, Vol. 2002(2002), No. 11, pp. 1-26.
12. Kavallaris N. I. and Tzanetis D. E., "An Ohmic heating nonlocal diffusion convection problem for the Heaviside function", *Australian and New Zealand Industrial and Applied Mathematics Journal (Electronic Version)*, (2002), pp. E114-E142.

13. Kavallaris, N. I. and Tzanetis D. E., "Behaviour of critical solutions of a non-local hyperbolic problem in Ohmic heating of foods." *Appl. Math. E-Notes* 2 (2002), 59-65 (electronic).
14. Nikolopoulos C. V., Tzanetis D. E., "A model for housing allocation of homeless population due to a natural disaster", *Nonlinear Analysis: Real World Applications* (2003), no. 4, 561-579.
15. Kavallaris N. I., Lacey A. A. and Tzanetis D. E., "Global existence and divergence of critical solutions of a non-local parabolic problem in Ohmic heating process". *Nonlinear Anal. Theory Methods and Applications*, 58 (2004), no. 7-8, 787-812.
16. Kavallaris N. I. and Tzanetis D. E., "Behaviour of a non-local reactive-convective problem with variable velocity in ohmic heating of food. Nonlocal elliptic and parabolic problems", 189-198, *Banach Center Publ.*, 66, Polish Acad. Sci., Warsaw, (2004).
17. Nikolopoulos C. V. and Tzanetis D. E., "Blow-up time estimates for a nonlocal reactive-convective problem modelling sterilization of food. Nonlocal elliptic and parabolic problems", 237-250, *Banach Center Publ.*, 66, Polish Acad. Sci., Warsaw, (2004).
18. Nikolopoulos C. V., Tzanetis D. E., "Estimates of blow-up time for a nonlocal reactive-convective problem modelling ohmic heating of foods." *Proc. Edinb. Math. Soc.* (2) 49 (2006), no. 1, 215-239.
19. Kavallaris N. I., Tzanetis D. E., "On the blow-up of a non-local parabolic problem". *Appl. Math. Lett.* 19 (2006), 921-925.
20. Kavallaris N. I., Lacey A. A., Nikolopoulos C. V. and Tzanetis D. E., "Asymptotic analysis and estimates of blow-up time for the radial symmetric semilinear heat equation in the open-spectrum case," *Mathematical Methods in Applied Sciences*, Vol 30, No 13, (2007) , 1507 – 1526.
21. Politikos D.B., Tzanetis D. E. "Population Dynamics of the Mediterranean Monk Seal in the National Marine Park of Alonissos, Greece." *Mathematical and Computing Modelling*, (2009), 505-515.
22. Latos E. A., Tzanetis D. E., "Existence and Blow-up of solutions for a nonlocal Filtration and Porous Medium problem." *Proceedings of Edinburgh Mathematical Society*, (2) 53 (2010), no.1, 195-209.
23. Latos E. A., Tzanetis D. E., "Grow-up of critical solutions for a non-local porous medium problem with Ohmic heating source," *Nonlinear Differential Equations and Applications*, 17, (2010), no. 2, 137-151.
24. Politikos D.B., Tzanetis D. E., Nikolopoulos C. V , Maravelias. "The application of an age-structured model to the north Aegean anchovy fishery: an evaluation of different management measures", *Mathematical Biosciences*, 237 (1-2), 17-27, (2012).
25. Latos E. A., Tzanetis D. E., Existence and blow-up of solutions for a semilinear filtration problem. *Elec. J. Differential Eqs* 2013, No. 178, 20 pp.
26. Kavallaris N. I., Lacey A. A., Nikolopoulos C. V. and Tzanetis D. E., A hyperbolic non-local problem modelling MEMS technology. *Rocky Mountain J. Math.* 41 (2011), no. 2, 505–534.
27. Kavallaris N. I., Lacey A. A., Nikolopoulos C. V. and Tzanetis D. E., "On the Quenching Behaviour of a Semilinear Wave Equation Modelling MEMS Technology", *Discrete and Continuous Dynamical Systems-Series A*, Vol. 35, No. 3, 13, 2015, p. 1009-1037.

**28.** D.V. Politikos,a, C.D. Maravelias and D.E. Tzanetis. Assessing the risk of alternative management strategies in a Mediterranean fishery: protecting the younger vs reducing fishing effort. J Biological Dynamics. 2013 Dec; 7(1): 183–198.

□ **Publications in Conferences Proceedings**

(I mention some of them, 9 of about 14)

- 1.** Lacey A. A., Tzanetis D. E. and Vlamos P. M., “Global existence and finite-time blow-up of a non-local hyperbolic problem modelling Ohmic heating of foods”, Proceedings of the 3rd International Workshop on Applied Mathematics in Science and Modern Technology, Metsovo, Greece, 30/6– 1/7, 1997, Pitman Research Notes in Mathematics Series, (1998), 390, p. 20-32.
- 2.** Kavallaris N. I., Tzanetis D. E., “Behaviour of solutions of a non-local diffusion-convection problem of the Ohmic heating process, Proceedings of the 4th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, October 8-10, 1999, Perdika, Thesprotia, Greece, World Scientific Publishing Co., Inc., (2000), p. 144-150.
- 3.** Kavallaris N. I., Nikolopoulos C. V. and Tzanetis D. E., “An estimate of blow-up time for the solution of a non-local Ohmic heating problem”, International Conference on Mathematical Analysis and its Applications, August 24-27, 2000, In memoriam Christos Papakyriakopoulos, Athens, Greece.
- 4.** Kavallaris N. I., Nikolopoulos C. V. and Tzanetis D. E., “Upper and lower bounds of blow-up time in a non-local thermistor problem”, Proceedings of the 5th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, October 18-19, 2001, Corfu, Greece, World Scientific Publishing Co., Inc.
- 5.** Kavallaris N. I., Tzanetis D. E., “Global in time unbounded solutions for a nonlocal thermistor problem”, Proceedings of the 5th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, October 18-19, 2001, Corfu, Greece, World Scientific Publishing Co. Inc.
- 6.** Kavallaris N. I., Tzanetis D. E., “Global existence and blow-up of solutions for a class of nonlocal problems with nonlinear diffusion”, Proceedings of the 6th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, September 18 –21, 2003, Tsepelovo, Epirus, Greece, World Scientific Publishing Co. Inc.
- 7.** Kavallaris N. I., Nikolopoulos C. V. and Tzanetis D. E., “Estimates of blow-up time for the “open-spectrum” case for the radial symmetric semilinear heat equation”, Proceedings of the International Conference on Numerical Analysis and Applied Mathematics (ICNAAM p.201-203, 2004), Chalkis, 10-14 September 2004, Greece, WILEY-VCH, Publications.
- 8.** Nikolopoulos C. V., Tzanetis D. E., “A Mathematical Model for Housing Allocation of the Homeless Population due to the Earthquake of September 1999 in Athens”, “Proceedings of the “Influence of Traditional Mathematics and Mechanics on Modern Science and Technology”, p.433-438, May 24-28, 2004, Messini, Greece.
- 9.** Kavallaris N. I., Nikolopoulos C. V. and Tzanetis D. E., “Estimates of blow-up time for the radial symmetric semilinear heat equation in the ‘open-

spectrum' case". Finite volumes for complex applications IV, 237-246, ISTE, London, 2005.

## **VI. CONFERENCES**

### **□ Participation – Talks in Conferences**

(I mention some of them)

1. "EQUADIFF 87" Democritus University of Thrace, Xanthi, Greece, August 24-28, 1987.
2. Symposium year (1987 - 88) on reaction-diffusion equations, Heriot-Watt University, Edinburgh, Scotland, June, 1988.
3. Workshop on Reaction Diffusion Equations, Anogeia, Crete, Greece, September 5-9, 1994.
4. Workshop on Scattering Theory of Acoustic Electromagnetic & Elastic Fields, Athens, Greece, September 16-17, 1994.
5. Workshop on Reaction-Diffusion Systems, Tenerife, Spain, January 9-13, 1995.
6. "EQUADIFF 95", Lisbon, Portugal, July 24-29, 1995.
7. International Conference on Reaction-Diffusion Systems, Trieste, Italy, October, 2-7, 1995.
8. The Second World Congress of Nonlinear Analysis, Athens, Greece, July 10-17, 1996.
9. 3th International Workshop on "Applied Mathematics in Science and Modern Technology", 30/6–1/7, 1997, Metsovo, Greece.
10. 4th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, October 8-10, 1999, Perdika, Thesprotia, Greece.
11. International Conference on Mathematical Analysis and its Applications, August 24-27, 2000, In memoriam Ch. Papakyriakopoulos, Athens, Greece.
12. 5th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, October 18 –19, 2001, Corfu, Greece.
13. 6th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, September 18–21, 2003, Tsepelovo, Epirus, Greece.
14. "International Conference on Modern Mathematical Methods in Science and Technology", 7-9 September 2006, Paros, Greece.
15. Conference on "Non-local Elliptic and Parabolic Problems", 9-14 September, 2003, Bedlewo, Poland.
16. Influence of Traditional Mathematics and Mechanics on Modern Science and Technology, May 24-28, 2004, Messini, Greece.
17. 4th International Symposium on Finite Volumes for Complex Applications, Marrakech, Morocco, July 2005. Finite Volumes for Complex Applications IV Problems & Perspectives.
18. "On the blow-up of a non-local parabolic problem" Loutraki Meeting on Spectrum, Differential Equations and Mathematical Physics ESF Programme SPECT Meeting October 16-17, 2005.
19. "Asymptotic analysis and estimates of blow-up time for the radial symmetric semilinear heat equation in the open-spectrum case", Toledo, Spain, 2006.
20. Dynamical Systems, Differential Equations and Applications. 6th AIMS Conference, Poitiers, France, 2007.

**21. M3ST '09, International Conference on Modern Mathematical Methods in Science and Technology, Poros, Greece, 2009.**

□ **Invited Speaker in Conferences and Talks** (I mention some of them)

1. Seventh International Colloquium on Differential Equations, Plovdiv, Bulgaria, “Blow-up and asymptotic behaviour of solutions in a non-local problem modeling Ohmic heating”, 18-23/8, (1996). (org. by Prof. D. Bainov).
2. Workshop on Evolution equations: existence, regularity and Singularities, “Blow -up and asymptotic behaviour of solutions of a nonlocal reactive-convective problem modelling Ohmic heating of foods”, Banach Center, Warsaw, 21/9-2/10, (1998). (organized by Prof. P. Biler).
3. Workshop on “Singularities arising in nonlinear problems” (SNP 2006), 4-6 December, (2006), Kyoto, Japan, (organized by Prof. H. Matano).
4. “Mathematical modelling and Population Dynamics”, Taipei, Taiwan, 22-29/1/2007, Normal National University of Taiwan, (invited by Prof. J-S. Guo)

□ **Conferences Attended** (I mention some of them)

1. Conference on Ordinary and Partial Differential Equations, University of Dundee, July 1984, Dundee, Scotland.
2. Symposium on Operator Theory”, NTUA, August 1985, Athens.
3. “Nineteenth study group with Industry”, Oxford Univ., England, June 1986.
4. “Symposium year on material instabilities in continuum mechanics”, Heriot-Watt University, Edinburgh, Scotland, 1985-86.
5. “The Calculus of Variations, Nonlinear Elasticity Theory, Numerical Analysis”, Heriot-Watt University, Edinburgh, Scotland, July 16-18, (1986).
6. Mathematical Challenges Motivated by Multi-Phase Materials: Analytical, Stochastic and Discrete Aspects, Anogeia, Crete, Greece, June 20-26, 2009.

## **VII. REFEREEING and REVIEWING IN SCIENTIFIC JOURNALS**

▪ **Refereed in the following Journals** (I mention some of them)

1. “Mathematical and Computer Modelling”
2. “Nonlinear Differential Equation and Applications”
3. “Applied Mathematics Letters”
4. “European Journal of Applied Mathematics”
5. “The IMA Journal of Applied Mathematics”
6. “Journal of Mathematical Analysis and Applications”

▪ **Maths Reviews**

Numerous (about 30) reviews (MathReview) in various Journals within the area of differential equations and mathematical modelling.

## **VIII. RESEARCH GRANTS** (I mention some of them)

1. “European Science Exchange Programme”, 1990 and 1993.
2. British Council in collaboration with Heriot-Watt University (1989 - 1992)
3. “Human Capital and Mobility Programme for a Scientific and Technical Cooperation Network” No ERBCHRXCT 930409, (1993-1996)
5. Kavallaris N. I., Research post doctorate programme (State Scholarships Foundation), 10/1999-12/2000.
6. Thalís I, National Technical University of Athens, 06/2003 – 11/ 2004.
7. Pythagoras I, (3/2004 – 8/2006). Athens, Greece, October, 2009.

**Athens, December 2016**