

## Kosmas K. Sideris



Professor

Telephone: +30-2541079862, +30-2541079492

E-Mail: [kksider@civil.duth.gr](mailto:kksider@civil.duth.gr)

Civil Engineering Department

Democritus University of Thrace

Kimmeria University Campus, Xanthi, GR 67100 GREECE

Kosmas Sideris was born in Athens. He is currently a Professor in the Laboratory of Building Materials at the Department of Civil Engineering, Democritus University of Thrace.

Kosmas Sideris is the author of two books in Cement Hydration and Concrete Durability and the author or co-author of more than 95 articles published in Greek and International Journals and Conferences. Dr. Sideris is a member of several International and National Scientific Committees and Societies (ACI, RILEM, CEN/SC1/WG1, ACI Hellas Chapter, Technical Chamber of Greece, Industrial By-Product Research and Development Association) and active member of RILEM TC DSC – Durability of Self Compacting Concrete, RILEM TC HPB - Physical properties and behaviour of High-Performance Concrete at high temperature, RILEM TC MPS- Mechanical properties of self-compacting concrete, RILEM TC SCM- Supplementary cementing materials in Concrete and RILEM TC CCC-Carbonation of concrete with supplementary Cementitious materials committees. He is member of CEN/TC104/SC1/WG1/ «Exposure Resistance Classes (RC)” committee.

His main research interests are focused in the durability of reinforced concrete structures and the technology of advanced concretes (self compacting concrete, high performance concrete, fibre reinforced concrete and concrete produced with pozzolanic additives and industrial by products). His secondary research interests are in the area of hydration kinetics of plain and blended cements and the use of special chemical admixtures in concrete.

Dr. Sideris has supervised more than 80 Diploma and Master Theses as well as four Ph.D Theses in the scientific area of concrete technology and durability.

He currently is an Associate Editor in “*Case Studies in Construction Materials*” journal of Elsevier publishing.

He currently is Editor in “*Construction and Building Materials*” journal of Elsevier publishing.

## Publications:

1. **Sideris K. K.**, Konsta M. S.: "Influence of the water to cement ratio W/C on the compressive strength of concrete – An application of the cement hydration equation to concrete", Journal "*Applied Composite Materials*", Volume 3, No 5, 1996, σελ. 335-343.
2. C.G. Karayannis, C.E. Chalioris, **K.K. Sideris**: "Effectiveness of RC beam-column connection repair using epoxy resin injections", Journal of Earthquake Engineering, Vol. 2, No. 2 (1998), pp. 217-240.
3. **K. K. Sideris**: "The Reliability of the X-ray diffraction quantitative determination of the fraction unhydrated in the hardened paste of Portland cement". Journal "*ADVANCES in CEMENT RESEARCH*" Vol. 12, Issue 3, July 2000, pp. 103-112.
4. **K. K. Sideris**: "The stoichiometry in the paste hydration of C<sub>3</sub>S, Alite and β-<sub>2</sub>S cured at 5, 25 and 50 °C". Journal "*ADVANCES in CEMENT RESEARCH*" Vol. 12, Issue 3, July 2000, pp. 113-120.
5. Batis, **K. K. Sideris** and P. Pantazopoulou: "Influence of Calcium Nitrite Inhibitor on the durability of mortars under contaminated chloride and sulfate environments", Anti-Corrosion Methods and Materials, Volume 51, Number 2, 2004, pp.112-120.
6. **K. K. Sideris**, P. Manita and K. Sideris: "Estimation of Ultimate Modulus of Elasticity and Poisson ratio of Normal Concrete", Cement and Concrete Composites, Volume 26, No 6, August 2004, pp. 623-631.
7. A. Savva, P. Manita, **K. K. Sideris**: "Influence of Elevated Temperatures at the Mechanical Properties of Blended Cement Concrete Prepared with Limestone and Silicate Aggregates", Cement and Concrete Composites, Volume 27, No 2, February 2005, pp. 239-248.
8. **K. K. Sideris**, A. Savva: "Durability of mixtures containing calcium nitrite based corrosion inhibitors", Cement and Concrete Composites, Volume 27, No 2, February 2005, pp. 277-287.
9. **K. K. Sideris**, A. Savva, J. Papayianni: "Sulfate attack and carbonation of plain and blended cements", Cement and Concrete Composites, Volume 28, No 1, January 2006, pp. 47-56.
10. **K. K. Sideris**: «Mechanical Characteristics of Self-Consolidating Concretes exposed to elevated temperatures», ASCE Journal of Materials in Civil Engineering, Volume 19, No 8, August 2007, pp. 648-654.

11. **K.K. Sideris**, P. Manita and E. Chaniotakis: "Performance of thermally damaged fibre reinforced concretes", *Construction and Building Materials*, Volume 23, No 3, March 2009, pp. 1232-1239.
12. N. Anagnostopoulos, **K.K.Sideris**, A. Georgiadis: "Mechanical characteristics of self-compacting concretes with different filler materials, exposed to elevated temperatures", *Materials and Structures*, Volume 42, No10, December 2009, pp.1393-1405.
13. A. Georgiadis, **K.K.Sideris**, N. Anagnostopoulos: "Properties of SCC Produced With Limestone Filler or V.M.A.", *ASCE Journal of Materials in Civil Engineering*, Volume 22, No 4, April 2010, pp. 352-360.
14. C.Chalioris, C. Papadopoulos, C. Pourzitidis, D. Fotis and **K. K. Sideris**: "Application of a reinforced self-compacting concrete jacket in damaged reinforced concrete beams under monotonic and repeated loading," *Journal of Engineering*, Volume 2013, <http://dx.doi.org/10.1155/2013/912983>.
15. **K.K. Sideris**, P. Manita: "Residual mechanical characteristics and spalling resistance of fiber reinforced self-compacting concretes exposed to elevated temperatures", *Construction and Building Materials*, Volume 41, April 2013, pp. 296-302.
16. **K.K. Sideris**, N. Anagnostopoulos: "Durability of normal strength self-compacting concretes and their impact on service life of reinforced concrete structures", *Construction and Building Materials* Volume 41, April 2013, pp. 491-497.
17. **K.K. Sideris**, P. Manita: "Mechanical characteristics and durability of self-consolidating concretes produced with no additional fine materials", *Journal of Sustainable cement based materials*, Vol. 3, Issue 3-4, 2014, pp. 234-244.
18. S. Kalogeropoulou, P. Pantazopoulou, A. Routoulas, G. Batis, **K.K. Sideris**, "Study of corrosion protection offered to concrete reinforcement by organic coatings and inhibitors", *Journal of Applied Research Review, A' Technology and Sciences*, Vol XV (2015), pp 31-40.
19. **Sideris K.K.**, Tassos C., Chatzopoulos A., Manita P.: "Mechanical characteristics and durability of self compacting concretes produced with ladle furnace slag", *Construction and Building Materials*, 170, April 2018, pp. 660-667.
20. G. Karayiannis, **K. K. Sideris**, C. M. Economou: "Response of Repaired R. C. Beams and Exterior Joints under Cyclic Flexural Loading". *Proceedings of the 5<sup>th</sup> SEGED Conference on "European Seismic Design Practice"*, London, October 1995. (Published by A. A. BALKEMA/ROTTERDAM/BROOKFIELD/1996, pp. 285-292).
21. K. K. Sideris, K. D. Baltzopoulou, C. G. Karayannis: "A proposal for the evaluation of concrete strength using ultrasonics". *Proceedings of the First*

Joint Belgian-Hellenic Conference on non-destructive Testing, Patra, Greece, May 22-23, 1995, pp.259-265 (Published by BALKEMA/ROTTERDAM/BROOKFIELD 1996).

22. K. K. Sideris, M. S. Konsta, C. G. Karayannis: "Application of the cement hydration equation to concrete". Proceedings of the International Congress on Concrete in the Service of Mankind, Dundee, Scotland, June 24-28 1996, pp. 343-349 (Published by E & SPON, London 1996).
23. K. Sideris, K. K. Sideris: "The Cement Hydration Equation and its Application to several Hydration Criteria according to the Literature". Proceedings of the 10th International Congress on the Chemistry of Cement, Gothenburg, Sweden, June 2-6, 1997, Volume 2, 2ii061 (Published by Amarkai AB Gothenburg, 1997).
24. K. K.Sideris, A. Savva, K. D.Baltzopoulou, C. M. Economou, K. Sideris: "Influence of Silica and Limestone Aggregates on the Final Compressive Strength of Blended Cement Concretes prepared with the Use of Three Different Pozzolanas". Proceedings of the 10th International Congress on the Chemistry of Cement, Gothenburg, Sweden, June 2-6, 1997, Volume 4, paper 4iv052 (Published by Amarkai AB Gothenburg, 1997).
25. K. K. Sideris: "Graphical estimation of the concrete compressive strength at older ages (>7 days) on the basis of the concrete strength values measured at the early ages of hydration". Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 8-10 September 1999, pp. 39-48 (Modern concrete materials: binders, additives and admixtures. Published by Thomas Thelford, London 1999).
26. K. K. Sideris, A. Savva, K. Sideris: "Quality control of ready mixed concrete using the cement hydration equation. Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 8-10 September 1999, pp. 247-255 (Utilizing ready mixed concrete and mortar. Published by Thomas Thelford, London 1999).
27. K. K. Sideris: "Determination of the mortar' s ultimate modulus of elasticity using the longitudinal resonant frequency method". Proceedings of the 2nd International Conference of Emerging Technologies in NDT/Athens/Greece, May 24-26 1999, pp. 263-268 (Published by A. A. BALKEMA/ ROTTERDAM/ BROOKFIELD/ 2000).
28. K. K. Sideris, A. E. Savva: "Durability of blended cements", Proceedings of Second International Symposium on Cement and Concrete Technology in the 2000' S, September 6-10, 2000 Istanbul, Turkey, pp. 283-292
29. K. K. Sideris, A. Savva, "Resistance of fly ash and natural pozzolans blended cement mortars and concrete to carbonation, sulfate attack and chloride ion penetration", Seventh CANMET/ACI international conference on fly ash,

- silica fume, slag and natural pozzolans in concrete, Mandras, India July 22-27 2001. CANMET/ACI SP 119 Volume II, pp. 275-293.
30. K. K. Sideris, A. Savva, "Influence of calcium nitride based corrosion inhibitor on the durability of Portland and blended cements", Proceedings (supplementary papers) of Fifth CANMET/ACI International Conference on Recent Advances in Concrete Technology, July 29-August 1, 2001, Singapore, pp. 121-138.
  31. G. Batis, K. K. Sideris, "Influence of calcium nitrite inhibitor on the corrosion of steel reinforcement due to carbonation", Innovations and developments in concrete materials and construction, Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 9-11 September 2002, pp. 367-372 (published by Thomas Telford, London 2002).
  32. K. K. Sideris, A. E. Savva, "Resistance of plain and blended cements under different sulfate environments" Concrete for extreme conditions, Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 9-11 September 2002, pp. 73-82 (published by Thomas Telford, London 2002).
  33. G. Batis, K. K. Sideris, "Influence of Inorganic and Organic Corrosion Inhibitors on Carbonation Mechanism and Corrosion of Steel Reinforcement", Proceedings of the 11th International Conference on the Chemistry of Cement, Durban, South Africa, May 2003, ISBN 0-9584085-8-0, pp. 1700-1706.
  34. K. K. Sideris, P. Manita, K. Sideris, "Determination of gypsum optimum content of Portland cement using the hydration criterion of maximum ultimate compressive strength", Proceedings of the 11th International Conference on the Chemistry of Cement, Durban, South Africa, May 2003, ISBN 0-9584085-8-0, pp. 1913-1919
  35. K.K. Sideris, P. Manita, A. Papageorgiou and E. Chaniotakis, "Mechanical Characteristics of High Performance Fibre Reinforced Concrete at Elevated Temperatures", Sixth CANMET/ACI International Conference on Durability of Concrete, Thessaloniki, 1-7 Ιουνίου 2003 CANMET/ACI SP 212, pp 973-988.
  36. Batis G., Sideris K.K. and Pantazopoulou P.: "Influence of Calcium Nitrite Inhibitor on Durability of Mortars under contaminated Chloride and Sulfate Environments", Sixth CANMET/ACI International Conference on Durability of Concrete, Thessaloniki, 1-7 Ιουνίου 2003 Supplementary Volume, pp. 83-99.
  37. Batis G., Rakanta E., Theodoridis B., Sideris K.K., Psomas K. and Barbari X.: "Influence of N-N Dimethyloaminoethanol Corrosion Inhibitor on Carbonation and Chloride –Induced Corrosion of Steel", Proceedings of the Seventh CANMET/ACI International Conference on Superplasticizers and

Other Chemical Admixtures in Concrete, Berlin, Germany, 21-24 October 2003, CANMET/ACI SP-217, pp. 469-478.

38. A. Routoulas, P. Koulouris, G. Batis and K.K. Sideris : “Investigations of Kiln Dust BF Slag and Corrosion Inhibitor Influence in Concrete Durability”, Admixture Enhancing Concrete Performance, Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 6-10 July 2005, pp. 69-78 (published by Thomas Thelford, London 2005).
39. G. Batis, E. Rakanta and K.K. Sideris: “Corrosion Protection Investigations With the Use of N-N Dimethyloaminoethanol Corrosion Inhibitor”, Admixture Enhancing Concrete Performance, Proceedings of the International Conference held at the University of Dundee, Scotland, UK on 6-10 July 2005, pp. 79-88 (published by Thomas Thelford, London 2005).
40. K. K. Sideris, P. Manita and D. Mai: “Influence of a lightweight-mortar fire protection layer on the residual mechanical characteristics of concrete after fire”. Proceedings of the Second International Conference on Concrete Solutions, St. Malo, France, June 2006, pp. 470-478.
41. N. Anagnostopoulos, A. Georgiadis and K. K. Sideris: “Application of the Cement Hydration Equation in Self Compacting Concrete’s Compressive Strength”, Proceedings of the XIII Conference on Computational Methods and Experimental Measurements, (C.A. Brebbia and G.M. Carlomagno Eds), Prague, 2007, pp. 655-670.
42. A.S. Georgiadis, N.S. Anagnostopoulos and K.K. Sideris: “Mechanical Characteristics of Self-Compacting Concretes produced with different filler materials”, Proceedings of the 5th International RILEM Symposium on Self Compacting Concrete, (G. De Schutter and V. Boel Eds), 3-5 September 2007, Ghent, Belgium, pp. 611-618.
43. N.S. Anagnostopoulos, A.S. Georgiadis, and K.K. Sideris: “Carbonation of Self Compacting Concretes produced with Different Materials”, Proceedings of the 5th International RILEM Symposium on Self Compacting Concrete, (G. De Schutter and V. Boel Eds), 3-5 September 2007, Ghent, Belgium, pp. 721-727.
44. K.K. Sideris, A.S. Georgiadis, N.S. Anagnostopoulos and P. Manita: “Low strength self-compacting concrete for building application”, Proceedings of the 9th International fib Congress: Tailor made concrete structures, new solutions for our society, 3-5 May 2008, Amsterdam, pp. 1057-1059.
45. K.K.Sideris and P. Manita: “Sulphate resistance of cements evaluated according to ASTM C1012 and AFNOR P18-837 Standards”, Proceedings of the Third International Conference on Concrete Solutions, Padova, Italy, June 2009, pp. 209-214.
46. K.K.Sideris, A.S. Georgiadis, N.S. Anagnostopoulos and P. Manita: “Mechanical characteristics and durability of low strength Self-consolidating

concrete produced with a new viscosity modifying agent”, Proceedings (Supplementary Volume) of the Ninth ACI International Conference on Superplasticizers and other Chemical Admixtures in Concrete and the Tenth ACI International Conference on Recent Advances in Concrete Technology and Sustainability Issues, Seville, Spain, 12-16 October 2009, ISBN 978-0-9731507-8-0, pp. 211-220.

47. A.S. Georgiadis and K.K. Sideris: “Mechanical Characteristics and Durability of SCC assessed on Cores drilled of Large Scale Structural Elements”, Proceedings of the 6th International RILEM Symposium on Self Compacting Concrete and the 4th North American Conference on the Design and Use of SCC, (Kamal H. Khayat and D. Feys Eds), 26-29 September 2010, Vol. II, Montreal, Canada, pp. 907-915.
48. N.S. Anagnostopoulos and K.K. Sideris: “Assessment and Comparison of Transport Properties in Order to Evaluate the Potential Durability of Self Compacting and Conventional Concretes”, Proceedings of the 6th International RILEM Symposium on Self Compacting Concrete and the 4th North American Conference on the Design and Use of SCC, (Kamal H. Khayat and D. Feys Eds), 26-29 September 2010, Montreal, Canada, Vol. II, pp. 1005-1015.
49. K.K. Sideris, A. Georgiadis, N. Anagnostopoulos, P. Manita and E. Skarlatos: “Life cycle cost analysis of reinforced concrete structures casted with self-compacting concrete and normally vibrated concrete”, Proceedings of the Fourth International Conference on Concrete Solutions, Dresden, Germany, 25-28 September 2011, pp. 835-840.
50. K.K. Sideris, P. Manita and E. Tsanaktsidis: “Mechanical Characteristics of fiber-reinforced self-compacting concretes exposed to elevated temperatures”, Proceedings of the 2nd International RILEM Workshop on Concrete Spalling due to Fire Exposure, Delft, The Netherlands, 5-7 October 2011, pp. 165-172.
51. K.K. Sideris: “Influence of length and dosage of polypropylene fibres on the fresh and hardened properties of self-compacting concrete”, Proceedings of the 7th International RILEM Symposium on Self Compacting Concrete, Paris, France, 1-3 September 2013.
52. K.K. Sideris, P. Manita: “Influence of length and dosage of polypropylene fibres on the spalling tendency and the residual properties of self-compacting concrete after heated at elevated temperatures”, Proceedings of the 3rd International RILEM Workshop on Concrete Spalling due to Fire Exposure, Paris, France, 25-27 September 2013, paper 02004.
53. N. Strompinis, K.K. Sideris, V-Z. Douros, I. Vitsios and I. Zervos: “Self-compacting repair mortars according to BS EN 1504-3”, Fifth International Conference on Concrete Repair, 1-3 September 2014, Belfast, pp. 653-657.

54. a) K.K.Sideris,, Ch. Tassos, A. Chatzopoulos: “Production of durable self-compacting concrete using ladle furnace slag (LFS) as filler material”, 7th Scientific-Technical Conference on Material Problems in Civil Engineering (MATBUD’2015), Procedia Engineering, Cracow, 22-24 June 2015, Vol. 108 (2015), pp. 592-597.
55. b) K.K. Sideris, A. Chatzopoulos, Ch. Tassos, P. Manita: “Long Term Durability Performance of Self-Compacting Concretes using Ladle Furnace Slag (LFS) Filler”, Proceedings of the 8th International RILEM Symposium on Self-Compacting Concrete SCC 2016, Washington DC, USA, 15-18 May 2016 pp. 909-922 (Supplementary Volume).
56. K.K. Sideris, A. Chatzopoulos, Ch. Tassos: “Production of durable concretes using EAF slag aggregates” Proceedings of the 6th International Conference on Concrete Repair, Thessaloniki, Greece, 20-22 June 2016, ISBN: 978-1-138-03008-4, pp. 625-630.
57. K.K. Sideris, E. Manikas, A. Michalakopoulos: “Effectiveness of different repair materials and methods used for the repair of chloride corroded reinforced concrete structures”, Proceedings of the 6th International Conference on Concrete Repair, Thessaloniki, Greece, 20-22 June 2016, ISB: 978-1-138-03008-4, pp. 301-305.
58. A. Elenas, K.K. Sideris: “Investigation, assessment and repair of a fire-damaged reinforced concrete structure”, Proceedings of the 6th International Conference on Concrete Repair, Thessaloniki, Greece, 20-22 June 2016, ISB: 978-1-138-03008-4, pp. 369-372.
59. K.K. Sideris, A. Chatzopoulos and C. Tassos: “Use of electric furnace slag for the production of durable sustainable concretes”, Proceedings of the 14th International Conference on Durability of Building Materials and Components, 29-31 May 2017, Ghent University, Belgium. paper DBMC 367.

### **Books:**

1. K. Sideris, **K.K. Sideris**: “*Ten Years Cement Hydration Equation and Its Application to Chemistry and Physics of Cement Paste, Mortar and Concrete*”, Xanthi, 2003, ISBN 960-343-722-0, p. 320.
2. **K.K. Sideris**: “Durability of Reinforced Concrete Structures” Xanthi, 2010, ISBN 978-960-8257-60-3 (in Greek).



## Book chapters:

1. **Kosmas Sideris**, Harald Justnes, Marios Soutsos and Tongbo Sui: **“Fly Ash”**, in *“Properties of Fresh and Hardened Concrete Containing Supplementary Cementitious Materials, State-of-the-Art Report of the RILEM Technical Committee 238-SCM, Working Group 4”* De Belie Nele, Soutsos Marios , Gruyaert, Elke (Eds.) , Springer Publishing, ISBN 978-3-319-70606-1, 2018, pp. 55-98.
2. Wang, K. Kovler, J. L. Provis, A. Buchwald, M. Cyr, C. Patapy, S. Kamali-Bernard, L. Courard and **Kosmas Sideris**: **“Metakaolin”**, in *“Properties of Fresh and Hardened Concrete Containing Supplementary Cementitious Materials, State-of-the-Art Report of the RILEM Technical Committee 238-SCM, Working Group 4”* De Belie, Nele, Soutsos, Marios , Gruyaert, Elke (Eds.) , Springer Publishing, ISBN 978-3-319-70606-1, 2018, pp. 153-180.
3. Christos Dedeloudis, Monika Zervaki, **Kosmas Sideris**, Maria Juenger, Natalia Alderete, Siham Kamali-Bernard, Yury Villagrán and Ruben Snellings: **“Natural Pozzolans”**, in *“Properties of Fresh and Hardened Concrete Containing Supplementary Cementitious Materials, State-of-the-Art Report of the RILEM Technical Committee 238-SCM, Working Group 4”* De Belie, Nele, Soutsos, Marios , Gruyaert, Elke (Eds.) , Springer Publishing, ISBN 978-3-319-70606-1, 2018, pp. 181-232.
4. Konstantin Sobolev, Marina Kozhukhova, **Kosmas Sideris**, Esperanza Menéndez and Manu Santhanam: **“Alternative Supplementary Cementitious Materials”**, in *“Properties of Fresh and Hardened Concrete Containing Supplementary Cementitious Materials, State-of-the-Art Report of the RILEM Technical Committee 238-SCM, Working Group 4”* De Belie Nele, Soutsos Marios , Gruyaert Elke (Eds.) , Springer Publishing, ISBN 978-3-319-70606-1, 2018, pp. 233-282.