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SUMMARIZED CURRICULUM VITAE

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Technical University of Crete
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Date of Birth: December 3, 1960
Place of birth: Chalkida, Evia, Greece
Nationality: Hellenic
Married, two sons

ACADEMIC STUDIES:

- Degree on Chemistry, Department of Chemistry, National Kapodestrian University, Athens, Greece, 1978-1983.
- Ph.D. Degree in Chemical Science, Department of Environmental Science, Cá Foscari Venice University, Italy, 1988-1992.
Title of Ph.D Thesis: "Chemical Effect of the Environment on Exposed Stone Surfaces and Investigations for their Conservation". Ph.D. awarded in September 1992. Supervisor: Prof. Guido Biscontin.

Schools and seminars:

- "Pigments: History, Characteristics and Use", 1990 Summer School, Institute of Archaeology, University College London, 9 - 13/7/1990.
- "Materials for Conservation", 1990 Summer School, Institute of Archaeology, University College London, 16 - 20/7/1990.
- "Weathering and Air Pollution", First Course on Stone Materials in monuments: Diagnosis and Conservation, Community of Mediterranean Universities, Salo', Italy, 2 - 9/9/1992.

Scholarships:

- Italian Government and Syremont S.p.A., Italy, Research Associate with "Centro di Studio sulle Cause di Degrado e sui Metodi di Conservazione delle Opere d'Arte", Consiglio Nazionale delle Ricerche, Florence, Italy, 1986-1989.
- Greek Republic Scholarships Foundation, Research scholarship, Department of Environmental Science, Cá Foscari Venice University, Italy, 1989-1992.

- Fellowship of the American School of Classical Studies, Athens, Greece, 1995-1996.

CURRENT EMPLOYMENT:

- Assistant Professor, Technical University of Crete, Department of Sciences, Laboratory of Analytical and Environmental Chemistry, 4/2008-.
- Teaching at the Interdepartmental Graduate School, Dept. of Chemical Engineering - Dept. of Architecture, National Technical University of Athens, in parallel to current position, 11/98- .
- Employee of the Ministry of Culture, “25th Department of Prehistoric and Classical Antiquities”, Chania, Crete, Greece, 1/98- 4/2008.

Research Interests:

- Study of decay mechanisms and weathering products of exposed stones and their conservation methods
- Study of the technology of historical mortars and design of repaired mortars compatible with the historical ones
- Development of new materials (water repellents, consolidants and mortars) for the structural and surface conservation of monuments, based upon studies of the original materials used for their construction
- Study of the effects of laser cleaning process on exposed stones
- Detection and analysis of pigments of ancient pottery
- Study of laser assisted techniques applied for the diagnosis and conservation of artefacts
- Study of laser assisted and optical non-destructive techniques applied for the monitoring of the weathering of artifacts
- Study of the chemical composition of the artefacts with the aid of non-destructive spectroscopic techniques (e.g. EDXRF, LIBS)

PhD Thesis: P. V. Maravelaki, “Effetto Chimico dell'Ambiente su Superfici Lapidree Esposte ed Indagini per un loro Recupero”, Tesi di Dottorato di Ricerca in Scienze Chimiche, IV ciclo, 1992, Universita' di Venezia, pages 150.

Publications in international journals:

- J1. P. V. Maravelaki, V. Zafiropoulos, M. Kalaitzaki, V. Kilikoglou and C. Fotakis, "Laser Induced Breakdown Spectroscopy as a diagnostic technique for the Laser cleaning of marble", *Spectrochimica Acta, part B*, 52, 1997, pp. 41-53. (47 Citations)
- J2. P. Maravelaki-Kalaitzaki and G. Biscontin, "Origin, characteristics and morphology of weathering crusts on Istria stone in Venice", *Atmospheric Environment*, 33(11), 1999, pp. 1699-1709. (12 Citations)
- J3. P. Maravelaki-Kalaitzaki, V. Zafiropoulos and C. Fotakis, "Excimer laser cleaning of encrustation on Pentelic marble: procedure and evaluation of the effects", *Applied Surface Science*, 148, 1999, pp. 92-104. (21 Citations)
- J4. P. Maravelaki-Kalaitzaki and G. Moraitou, "Sorel's cement mortars: Decay susceptibility and effect on Pentelic marble", *Cement and Concrete Research*, 29(12), 1999, pp. 1929-1935. (6 Citations)
- J5. G. Marakis, P. Maravelaki, V. Zafiropoulos, S. Klein, J. Hildenhagen, K. Dickmann, "Investigations on cleaning of black crusted sandstone using different UV-pulsed lasers", *Journal of Cultural Heritage*, 1, 2000, pp. 61s-64s. (4 Citations)
- J6. P. Maravelaki-Kalaitzaki, D. Anglos, V. Kilikoglou, V. Zafiropoulos, "Compositional characterization of encrustation on marble with laser induced breakdown spectroscopy", *Spectrochimica Acta, part B*, 56(6), 2001, pp. 887-903. (16 Citations)
- J7. P. Maravelaki-Kalaitzaki, R. Bertinello, G. Biscontin, "Evaluation of the Initial Weathering Rate of Istria Stone Exposed to Rain Action, in Venice, with X-ray Photoelectron Spectroscopy", *Journal of Cultural Heritage*, 3, 2002, pp. 273-282.
- J8. P. Maravelaki-Kalaitzaki, A. Bakolas, A. Moropoulou, "Physico-chemical Study of Cretan Ancient Mortars", *Cement and Concrete Research*, 33/5, 2003, pp. 651-661. (11 Citations)
- J9. P. Maravelaki-Kalaitzaki, V. Zafiropoulos, P. Pouli, D. Anglos, C. Balas, R. Salimbeni, S. Siano, R. Pini, "Short Free Running Nd:YAG laser to clean different encrustation on Pentelic marble: procedure and evaluation of the effects", *Journal of Cultural Heritage*, 4, S1, 2003, pp. 77-82. (1 Citation)
- J10. G. Marakis, P. Pouli, V. Zafiropoulos, P. Maravelaki-Kalaitzaki, "Comparative study on the application of the 1st and the 3rd harmonic of a Nd: YAG laser system to clean black encrustation on marble", *Journal of Cultural Heritage*, 4, S1, 2003, pp. 83-91. (3 Citations)
- J11. V. Zafiropoulos, C. Balas, A. Manousaki, G. Marakis, P. Maravelaki-Kalaitzaki, K. Melesanaki, P. Pouli, T. Stratoudaki, S. Klein, J. Hildenhagen, K. Dickmann, B. S. Luk'yanchuk, C. Mujat, A. Dogariu, "Yellowing effect and discoloration of pigments: Experimental and Theoretical studies", *Journal of Cultural Heritage*, 4, S1, 2003, pp. 249-256. (8 Citations)
- J12. P. Maravelaki-Kalaitzaki, N. Kalithrakas-Kontos, "Pigment and Terracotta Analyses of Hellenistic Figurines, in Crete", *Analytica Chimica Acta*, 497, 2003, pp. 209-225. (5 Citations)

- J13. N. Kallithrakas-Kontos, P. Maravelaki-Kalaitzaki, “EDXRF as an analytical tool in art: case studies from pigment identification and treatment assessment”, *Journal of Radioanalytical and Nuclear Chemistry*, 262(3), 2004, pp. 713-719. (2 Citations)
- J14. P. Maravelaki-Kalaitzaki, I. Karatasios, A. Bakolas, V. Kilikoglou, “Hydraulic lime mortars for the restoration of the historic masonry in Crete”, *Cement and Concrete Research*, 35, 2005, pp. 1577–1586. (1 Citation)
- J15. P. Maravelaki-Kalaitzaki, “Black crusts and patinas on Pentelic marble from the Parthenon and Erechtheum (Acropolis, Athens): characterization and origin, *Analytica Chimica Acta*, 532, 2005, pp. 187-198. (14 Citations)
- J16. P. Maravelaki-Kalaitzaki, N. Kallithrakas-Kontos, D. Korakaki, Z. Agioutantis, S. Maurigiannakis, “Evaluation of silicon-based strengthening agents on porous limestones”, *Progress in Organic Coatings*, 57, 2006, pp. 140-148.
- J17. P. Kapsalas, P. Maravelaki-Kalaitzaki, M. Zervakis, E.T. Delegou, A. Moropoulou, “Optical inspection for quantification of decay on stone surfaces”, *NDT&E International*, 40, 2007, pp. 2-11.
- J18. P. Maravelaki-Kalaitzaki, “Hydraulic lime-mortars with siloxane for waterproofing historic masonry”, *Cement and Concrete Research*, 37(2), 2007, pp. 283-290.
- J19. P. Kapsalas, M. Zervakis and P. Maravelaki-Kalaitzaki, “Evaluation of Image Segmentation Approaches for Non-Destructive Detection and Quantification of Corrosion Damage on Stonework”, *Corrosion Science*, 49, 2007, pp. 4415–4442.
- J20. P. Kapsalas, P. Maravelaki-Kalaitzaki, M. Zervakis, E.T. Delegou, A. Moropoulou, “A Morphological Fusion Algorithm for Optical Detection and Quantification of Decay Patterns on Stone Surfaces”, *Construction and Building Materials*, 22, 2008, pp. 228-238.
- J21. Meral Budak, Pagona Maravelaki-Kalaitzaki, Nikolaos Kallithrakas-Kontos, “Chemical characterization of Cretan clays for the design of restoration mortars”, *Microchimica Acta*, 162, 2008, pp. 325-331.
- J22. P. Maravelaki-Kalaitzaki, N. Kallithrakas-Kontos, Z. Agioutantis, S. Maurigiannakis, D. Korakaki, “A comparative study of porous limestones treated with silicon-based strengthening agents, *Progress in Organic Coatings*”, *Organic Coatings*, 62, 2008, pp. 49–60.
- J23. M. Tziotziou, E. Karakosta, I. Karatasios, G. Diamantopoulos, A. Sapolidis, M. Fardis, P. Maravelaki-Kalaitzaki, G. Papavassiliou, V. Kilikoglou, Application of ¹H NMR in hydration and porosity studies of lime pozzolan mixtures, *Microporous & Mesoporous Materials*, accepted, 2010.
- J24. P. Maravelaki-Kalaitzaki, A. Galanos, I. Doganis, N. Kallithrakas-Kontos, Physico-chemical characterization of mortars as a tool in studying specific hydraulic components: application to the study of ancient Naxos aqueduct, *Applied Physics A: Materials Science & Processing*, accepted, 2010.

Chapter in books

- B21. H.A. Viles, D. Camuffo, S. Fitz, B. Fitzner, O. Lindqvist, R.A. Livingston, P.V. Maravelaki, C. Sabbioni, T. Warscheid, “What is the state of our knowledge of the mechanisms of deterioration and how are our estimates of rates of deterioration?”. In: *Saving Our Architectural Heritage: The Conservation of Historic Stone Structures*, edited by Baer, N. S. and R. Snethlage, Wiley, 1997, pp. 95-112. (6 Citations)
- B22. P. Maravelaki-Kalaitzaki, “Innovative techniques for the characterization of encrustation on Pentelic marble from the Parthenon”. In: *Cultural Heritage Conservation and Environmental Impact Assessment by Non-Destructive Testing and Micro-Analysis*, edited by R. Van Grieken & K. Janssens, A.A Balkema publishers, 2005 Talyor & Francis Group, London, pp. 135-148.

Publications in Periodical Books

- JP23. G. Biscontin, V. Fassina, P. Maravelaki, E. Zendri, “Venice: Stone material behaviour in connection with the environment”, *Materials Issues in Art and Archaeology II*, edited by Vandiver, Pamela B. Druzik, James; and Wheeler, George Segan, Pittsburgh: Materials Research Society, vol. 185, 1991, pp. 253-263. (cited: AATA¹ n. 28-2940). (1 Citation)
- JP24. P. Maravelaki, R. Bertocello, G. Biscontin, G. Battaglin, E. Zendri, E. Tondello, “Investigations of the surface processes on exposed limestones”, *Materials Issues in Art and Archaeology III*, edited by Vandiver, Pamela B. Druzik, James; and Wheeler, George Segan, Pittsburgh: Materials Research Society, vol. 267, 1992, pp. 943-953. (cited: AATA n. 31-947).
- JP25. P. Maravelaki. G. Biscontin, E. Zendri, R. Polloni, W. Cecchetti, “Cleaning with LASER radiation on Istria stone”, *Materials Issues in Art and Archaeology III*, edited by Vandiver, Pamela B. Druzik, James; and Wheeler, George Segan, Pittsburgh: Materials Research Society, vol. 267, 1992, pp. 955-961. (cited: AATA n. 31-946) (4 Citations)
- JP26. G. Biscontin, P. Maravelaki, E. Zendri, A. Glisenti, “Siliconic and acrylic resins dispersed in water as protectives for stone surface”, *Materials Issues in Art and Archaeology III*, edited by Vandiver, Pamela B. Druzik, James; and Wheeler, George Segan, Mat. Res. Soc. Symp. Proc. Pittsburgh: Materials Research Society, vol. 267, 1992, pp. 935-941. (cited: AATA n.31-861) (1 Citation)
- JP27. A. Moropoulou, P. Maravelaki-Kalaitzaki, M. Borboudakis, A. Bakolas, P. Michailidis, M. Chronopoulos, “Historic mortars technologies in Crete and guidelines for compatible restoration mortars”, *PACT, Journal of the European Study Group on Physical, Chemical, Biological and Mathematical Techniques Applied to Archaeology*, Ed. G. Biscontin, A. Moropoulou, M. Erdik, J. Delgado Rodrigues, Publ. Technical Chamber of Greece, Athens, vol. 55, 1998, pp. 55-72. (4 Citations)

¹ AATA: Art and Archaeology Technical Abstracts

Publications in local journals

- LP1. G. Borselli, M. Camaiti, A. Pasetti, P. Maravelaki, U. Matteoli, “La conservazione del patrimonio monumentale. Protettivi impiegati nella conservazione dei materiali lapidei: storia, impieghi e sviluppi”, *L'Edilizia*, 4, 1990, pp. 67-78. (3 Citations)
- LP2. Th. Markopoulos, P. Maravelaki, E. Repouskou, G. Stefanogiannis, “Mineralogical and Petrographical Study of Stone and Mortars from the Venetian Fortifications of Chania”, *Bulletin of the Greek Geological Society*, 29, 1993, 47-60.
- LP3. Papageorgakis, P. Maravelaki, “Comparison study of the construction materials from the Palace of Knossos and the ancient quarries”, *Bulletin of the Greek Geological Society*, 29, 1993, 61-70.
- LP4. P. Maravelaki, V. Zafiropoulos, V. Kilikoglou, M. Kalaitzaki, C. Fotakis, “Diagnostic techniques for the laser cleaning of marble”, *Restauratorenblätter*, Sonderband – Lacona I, Lasers in the Conservation of Artworks, edited by E. Konig and W. Kautek, Verlag Mayer & Comp. Vienne, 1997, pp. 31-35. (1 Citation)
- LP5. C. Fotakis, V. Zafiropoulos, D. Anglos, S. Georgiou, N. Maravelaki, A. Fostiridou and M. Doulgeridis, “Lasers in art conservation”, In: *The Interface between Science and Conservation*, edited by S. Bradley, The Trustees of the British Museum, 1997, pp. 83-90. (1 Citation)

Publications in Conference Proceedings

- CP1. G. Alessandrini, R. Bugini, P. Barabino, G. Belezza, M. Momo, G. Biscontin, P. Maravelaki, G. Brunetti, P. Carbone, L. Paolini, S. Volpin, “Indagini conoscitive multidisciplinari per un cantiere di restauro: La Palazzina da caccia di Stupinigi”, *Scienza e Beni Culturali II*, edited by G. Biscontin, M. dal Colle and S. Volpin, Publ. Libreria Progetto Editore, Padova, 1989, pp. 699-714. (cited: AATA n. 27-336)
- CP2. C. Manganelli del Fa', M. Camaiti, G. Borselli, P. Maravelaki, P. Tiano, “Variazione del grado di idratazione dell'ossalato di calcio in funzione delle condizioni termogravimetriche”, Proc. *1st Intern. Symposium, The Oxalate films: origin and significance in the conservation of works of art*, Publ. Centro ‘Gino Bozza’ per lo studio delle cause di deperimento e dei metodi di conservazione delle opere d’arte, Milan, 1989, pp. 91-101. (cited: AATA n. 27-2409) (1 Citation)
- CP3. G. Biscontin, G. Cristinelli, P. Maravelaki, A. Marigo, G. Vianello, E. Zendri, “Indagini conoscitive per un progetto di restauro dei materiali lapidei del Portale di S. Maria dei Servi a Venezia”, *Scienza e Beni Culturali VII*, edited by G. Biscontin and D. Mietto, Publ. Libreria Progetto Editore, Padova, 1991, pp. 813-833. (cited: AATA n. 29-2882)
- CP4. P. Maravelaki, E. Zendri, G. Biscontin, G. Repaci, “Indagini sulle superfici in pietra d'Istria a Venezia”, *Scienza e Beni Culturali VII*, edited by G. Biscontin and D. Mietto, Publ. Libreria Progetto Editore, Padova, 1991, pp. 911-921. (cited: AATA n. 29-2972)
- CP5. M. T. Berlasso, A. Bruschi, G. Longega, T. Pagani, T. Perusini, A. Proietti, G. Biscontin, G. Repaci, P. Maravelaki, E. Zendri, G. Galeazzo, P. Spadea, “Studi

preliminari per un intervento conservativo del Duomo di Udine”, *Scienza e Beni Culturali VII*, edited by G. Biscontin and D. Mietto, Publ. Libreria Progetto Editore, Padova, 1991, pp. 923-942. (cited: AATA n. 29-2880)

- CP6. G. Biscontin, C. Felix, P. Maravelaki, E. Zendri, “Characteristics, weathering forms and mechanisms of Istria stone in Venice”, Proc. of the 2nd Intern. Symp. *The conservation of Monuments in the Mediterranean Basin*, edited by D. Decrouez, J. Chamay and F. Zezza, Geneve, 1991, pp. 141-153. (cited: AATA n. 31-860)
- CP7. G. Biscontin, P. Maravelaki, E. Zendri, “The case of Portale di S. Maria dei Servi, in Venice: results of physico-chemical inquiries”, Proc. of the 2nd Intern. Symp. *The Conservation of Monuments in the Mediterranean Basin*, edited by D. Decrouez, J. Chamay and F. Zezza, Geneva, 1992, pp. 155-166. (cited: AATA n.31-859)
- CP8. C. Felix and P. Maravelaki, “Black crusts with different origins on limestones and sandstones”, *Materials Science and Restoration*, Proc. 3rd Inter. Coll. Technische Akademie Esslingen, edited by F. H. Wittman, DI Elmar Wippler, expert verlag, vol. 3, 1992, pp. 1728-1740.
- CP9. R. Bertocello, G. Biscontin, P. Maravelaki, E. Tondello, E. Zendri, “Indagini sui processi di trasformazioni superficiali di materiali lapidei”, Proc. *Symposium Omaggio Scientifico a R. Turizziani*, Roma, 1992, vol. I, pp. 215-228.
- CP10. G. Biscontin, A. Bacolas, P. Maravelaki, E. Zendri, “Indagini sulle azioni chimicofisiche dell'ambiente su laterizi”, *Scienza e Beni Culturali VIII*, edited by G. Biscontin and D. Mietto, Publ. Libreria Progetto Editore Padova, 1992, pp. 367-377. (cited: AATA n. 30-3147)
- CP11. P. Maravelaki, G. Biscontin, R. Polloni, W. Cecchetti and E. Zendri, “Investigation on surface alteration of limestone related to cleaning processes”, in Proc. 7th Intl. Congress on *Deterioration and Conservation of Stone*, edited by J. Delgado Rodrigues, F. Henriques and F. T. Jeremias, Lisbon: Laboratorio Nacional de Engenharia Civil, 1992, pp. 1093-1102. (cited: AATA n. 30-1997) (9 Citations)
- CP12. P. Maravelaki, G. Biscontin, L. Marchesini, G. Repaci, “Evaluation of deterioration processes on the Istria stone of Venetian monuments”, in Proc. 7th Intl. Congress on *Deterioration and Conservation of Stone*, edited by J. Delgado Rodrigues, F. Henriques and F. T. Jeremias, Lisbon: Laboratorio Nacional de Engenharia Civil, 1992, vol. 1, pp. 163-173. (cited: AATA n. 30-1996) (2 Citations)
- CP13. C. Felix, P. Maravelaki, “Black crusts with different origins on the Istria Stone in Venice”, in Proc. 7th Intl. Congress on *Deterioration and Conservation of Stone*, edited by J. Delgado Rodrigues, F. Henriques and F. T. Jeremias, Lisbon: Laboratorio Nacional de Engenharia Civil, 1992, pp. 267-276. (cited: AATA n. 30-1886) (2 Citations)
- CP14. G. Biscontin, A. Bakolas, E. Zendri, P. Maravelaki, “Microstructural characteristics of historical Venetian mortars”, *Conservation of Stone and Other Materials*, edited by M.J. Thiel, RILEM UNESCO, Publ. E&FN SPON, Chapman & Hall, Paris, vol. 2, 1993, pp. 178-185. (4 Citations)

- CP15. A. Moropoulou, G. Biscontin, P. Theoulakis, K. Bisbikou, E. Zendri, A. Bakolas, P. Maravelaki, "Behavior of the bricks of the Corfu Venetian fortress", *Conservation of Stone and Other Materials*, edited by M.J. Thiel, RILEM UNESCO, Publ. E&FN SPON, Chapman & Hall, Paris, vol. 2, 1993, pp. 402-410.
- CP16. G. Biscontin, P. Maravelaki, E. Zendri, A. Glisenti, E. Tondello, "Investigation on the interaction between aqueous and organic solvent protective and building materials", *Conservation of Stone and Other Materials*, edited by M.J. Thiel, RILEM UNESCO, Publ. E&FN SPON, Chapman & Hall, Paris, vol. 2, 1993, pp. 689-696. (cited: AATA n. 31-858) (3 Citations)
- CP17. A. Bakolas, G. Biscontin, Th. Markopoulos, P. Maravelaki, E. Repouskou, E. Zendri, "Indagini su calcestruzzi usati nell'area archeologica di Knossos", *Scienza e Beni Culturali IX*, edited by G. Biscontin, Publ. Libreria Progetto Editore Padova, 1993, pp. 403-414.
- CP18. P. Maravelaki, Th. Markopoulos, P. Trimantilli-M^cGann, E. Repouscou, "Problemi di degrado dei materiali lapidei e delle malte delle fortificazioni veneziane a Chania", Proc. Intern. Symposium, *Le pietre da costruzione: il tufo calcareo e la pietra Leccese*, Consiglio Nazionale delle Ricerche-Progetto Finalizzato Edilizia: Istituto per la Residenza e le Infrastrutture Sociali (CNR-IRIS), Bari, Italy, 1993, pp. 389-405.
- CP19. G. Biscontin, G. Driussi, P. Maravelaki and E. Zendri, "Physical-chemical investigations of stone architectonic surfaces in Venice: the Scuola Grande dei Carmini", In: *Conservation of Architectural Surfaces: Stones and Wall Covering*, edited by G. Biscontin and L. Graziano, Il Gardo, Venice, 1993, pp. 125-136. (5 Citations)
- CP20. Th. Markopoulos, P. Maravelaki, E. Repouskou, "The materials of the Venetian fortifications in Chania: properties, weathering forms and mechanisms", Proc. of the 3rd Intern. Symp. *The Conservation of Monuments in the Mediterranean Basin*, edited by V. Fassina and F. Zezza, Venice, 1994, pp. 687-692.
- CP21. P. Maravelaki, V. Zafirooulos, M. Kalaitzaki, V. Kylikoglou and C. Fotakis, "Diagnostic techniques for the laser cleaning of marble", In Proc. 8th Intl. Congress on *Deterioration and Conservation of Stone*, edited by J. Riederer, Moller Druck and Verlag, Berlin, 1996, pp. 1395-1404.
- CP22. P. Maravelaki, V. Zafirooulos, V. Kilikoglou and C. Fotakis, "Laser cleaning of marble", Proc. 7th Workshop *Eurocare-Euromarble EU 496*, edited by P. Koutsoukos, C. Kontoyannis, Foundation of Research & Technology, Institute of Chemical Engineering & High Temperature Chemical Processes (ICE/HT-FORTH), Patras, 1996, pp. 74-93.
- CP23. P. Maravelaki-Kalaitzaki, "Encrustation on Pentelic marble: cleaning and evaluation with laser techniques", Proceedings of the Interdisciplinary Workshop *The Building Stone in Monuments*, Publications IGME, edited by M. Varti-Matarangas and Y. Katsikis, Athens, 2002, pp. 321-333. (1 Citation)
- CP24. P. Maravelaki-Kalaitzaki, "Innovative techniques for the characterization of encrustation on Pentelic marble from the Parthenon", 7th International Conference on *Non-Destructive Testing and Microanalysis for the Diagnostics and Conservation of*

Cultural and Environmental Heritage, Belgium, 2-6 June 2002, Book of Extended Abstracts, 12 pages (invited).

- CP25. P. Maravelaki-Kalaitzaki, N. Kallithrakas-Kontos, “Barium hydroxide as strengthening agent for porous limestones: assessment of efficiency after fifteen years of treatment”, Proceedings of *Science and Cultural Heritage XIXth International Congress*, “REVERSIBILITY IN RESTORATIONS: Thoughts, experiences, research routes”, July 2003, Bressanone, Italy, pp. 307-315.
- CP26. P. Maravelaki-Kalaitzaki, N. Kallithrakas-Kontos, “Surface Analysis in Archaeology and Conservation by EDXRF”, Proceedings of the 3rd International Conference on *Non-Destructive Testing of the Hellenic Society for NDT*, 15-18 October 2003, Chania, Crete, Greece, pp. 235-240.
- CP27. V. Zafiropulos, P. Pouli, V. Kylikoglou, P. Maravelaki-Kalaitzaki, B. S. Luk'yanchuk and A. Dogariu, “Synchronous Use of IR and UV Laser Pulses in the Removal of Encrustation: Mechanistic Aspects, Discoloration Phenomena and Benefits”, Lasers in the Conservation of Artworks, *Springer Proceedings in Physics*, LACONA V Proceedings, Osnabrück, Germany, Sept. 15–18, 2003, ed. Klaus Dickmann, Costas Fotakis and John F. Asmus, part VII, pp. 311-318. (*2 Citations*)
- CP28. P. Maravelaki-Kalaitzaki, Z. Agioutantis, S. Maurigiannakis, N. Kallithrakas-Kontos, “Evaluation of the effectiveness of silicon-based strengthening agents on porous limestones”, Proceedings *10th International Congress on Deterioration and Conservation of Stone*, Stockholm June 27-July 2, 2004, ICOMOS Sweden, edited by D. Kwiatkowski and R. Lofvendahl, vol. I, pp. 487-494.
- CP29. P. Maravelaki-Kalaitzaki, “Restoration of the Venetian Fortress of Firka, Chania, Crete, Greece”, 7th National Congress on Mechanics (HSTAM2004), Hellenic Society for Theoretical & Applied Mechanics, Technical University of Crete, Eds. A. Kounadis, C. Providakis and G. Exadaktylos, June 24-26, 2004, Chania, Crete, Greece, pp. 44-50.
- CP30. Z. Agioutantis, S. Maurigiannakis, P. Maravelaki-Kalaitzaki, “Modeling the behavior of strengthening agents on porous geomaterials”, 7th National Congress on Mechanics (HSTAM2004), Hellenic Society for Theoretical & Applied Mechanics, Technical University of Crete, Eds. A. Kounadis, C. Providakis and G. Exadaktylos, June 24-26, 2004, Chania, Crete, Greece, pp. 138-143.
- CP31. P. Maravelaki-Kalaitzaki, “Characterization of weathering crusts from monuments in Athens, Greece”, Proceedings *International Workshop on Air Pollution and Cultural Heritage*, Seville, 2004, Balkema, 2004 Taylor & Francis Group, London, pp. 71-78.
- CP32. N. Kallithrakas-Kontos, P. Maravelaki-Kalaitzaki, “EDXRF study of Late Minoan metallic artworks”, *International Symposium, Aegean Metallurgy in Bronze Age*, in press 2007, Rethymnon, Crete.
- CP33. N. Maravelaki-Kalaitzaki, N. Kallithrakas-Kontos, V. Perdikatsis, “Pigment and terracotta analyses from Hellenistic figurines”, Proceedings of the International Cretological Conference, Chania 2007, in press.

- CP34. P. Kapsalas, M. Zervakis, P. Maravelaki-Kalaitzaki, E.T Delegou, A. Moropoulou, "NDT Detection of Decay Areas and Evaluation of their Attributes", Accepted for publication in the *XXI CIPA Symposium* (Athens, October 2007).
- CP35. N. Μαραβελάκη, Γ. Χριστοδουλάκος «Εφαρμογή συμβατών κονιαμάτων για την αποκατάσταση και λειτουργία του αρχαιολογικού μουσείου Κισάμου», Πρακτικά 1ου Πανελληνίου Συνεδρίου Δομικών Υλικών & Στοιχείων, 21-23 Μαΐου 2008, Αθήνα.
- CP36. Galanos A., Doganis I., Maravelaki-Kalaitzaki P., Kallithrakas-Kontos N., Hydraulic Mortars and Plasters at the Ancient Aqueduct of Naxos, Greece, 11th International Congress on Deterioration and Conservation of Stone, 15-20/9/2008, Torun, Poland.
- CP37. A. Galanos, I. Doganis, P. Maravelaki-Kalaitzaki, N.Kallithrakas-Kontos, Investigation for Durable Cast Stone Mortars for Use in a Marine Environment, 11th International Congress on Deterioration and Conservation of Stone, 15-20/9/2008, Torun, Poland.
- CP38. N. Maravelaki¹, A. Galanos, I. Doganis, N. Kallithrakas-Kontos, Pigmented plasters at the Acropolis of ancient Karthaia, Greece, 5th Symposium of the Hellenic Society for Archaeometry, 8-10/10/2008, Athens.
- CP39. L. Kalogerakis, A. Verganelaki, C. Kapridaki, A. Gotsis, P. Maravelaki, Hybrid TEOS/colloidal silica/TiO₂/PDMS composites for stone consolidation, P2-19, 7th International Conference – NN10 on Nanosciences & Nanotechnologies, 11-14 July 2010 Ouranoupolis, Halkidiki, Greece.
- CP40. C. Kapridaki, P. Maravelaki, Titania-silica sol-gel bactericide coatings on marble, P2-20, 7th International Conference – NN10 on Nanosciences & Nanotechnologies, 11-14 July 2010 Ouranoupolis, Halkidiki, Greece.

Other publications

- OP1. Papageorgakis J. Markopoulos, Th. Maravelaki, P. "Building stones of the Minoan Palace of Knossos, Guide-Book". *Community of Mediterranean Universities. Second Course on Stone Materials in Monuments: Diagnosis and Conservation*, Heraklion, Crete, 24-30 May, 1993.
- OP2. Th. Markopoulos, P. Maravelaki, "Venetian Fortifications in Chania, Crete: diagnosis of the decay and guidelines for their conservation", *Diastasi*, Newsletter of the Technical Chamber of Greece, Section of West Crete, 1993, pp. 22-26.

PREVIOUS POSITIONS & PROFESSIONAL EXPERIENCE

- Research Associate with "Centro di Studio sulle Cause di Degrado e sui Metodi di Conservazione delle Opere d'Arte", Consiglio Nazionale delle Ricerche, Florence, Italy, 1/9/86 - 30/8/88. Involved with the study of decay mechanisms of exposed stones and their conservation methods.

- Research Associate with "Laboratoire de Conservation de la Pierre", Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland, 1/3/92 - 30/6/92. Study of yellow stains appearing on marble constructions.
- Research Associate with "13th Ephorate of Byzantine and post Byzantine Antiquities", Chania, Crete, Greece, 20/8/92 - 31/12/92. Study of decay mechanisms and weathering products of the materials used in the Venetian Fortifications, at Chania, Crete, Greece.
- Research Associate with the Department "Mineral Resources Engineering", Technical University of Crete, Chania, Crete, Greece, 10/1/93-30/8/95. Participation in the following research projects:
 - The decay mechanisms and weathering products of the materials used in the Venetian Fortifications, at Chania, Crete, Greece.
 - Weathering problems of the materials used for the construction of the Venetian Fortifications, at Heraklion, Crete, Greece.
 - Development of new materials for the structural and surface conservation of monuments, based upon studies of the original materials used for their construction.
- Under Contract Teaching Assignment, Department of "Conservation Antiquities and Works of Art", Technological Education Institute of Athens, Athens, 3/10/1994 - 10/7/97. Teaching of the course "Stone decay and Conservation".
- Research Associate with the "Institute of Electronic Structure & Laser", Foundation for Research and Technology - Hellas (FO. R. T. H.), Heraklion, Crete, Greece, 1/9/95 - 31/8/96. Study of the effects of laser cleaning process on marble.
- Research Associate with "1st Department of Prehistoric and Classical Antiquities", Athens, Greece, 1/9/96 - 31/8/97. Study of decay mechanisms and weathering products of the construction materials of Acropolis, Athens, Greece.
- Employee of the Ministry of Culture, "25th Department of Prehistoric and Classical Antiquities", Chania, Crete, Greece, 1/9/98 - 16/4/2008. Study of decay mechanisms and weathering products of the construction materials of ancient excavated areas in Chania, Crete, Greece. Detection and analysis of pigments and organic residues of ancient pottery.

EDUCATION

- Lecturer at the Conservation Department of the Technological Educational Institute, Athens, courses on Stone Decay and Conservation (1994-1997).
- Lecturer at post-graduate level on "Advanced Methodologies and Information Systems in the Archaeology, Interdepartmental Graduate School, Dept. of History-Archaeology - Dept. of Computer Engineering, University of Crete, 10/99 - 12/99 and 3/00 - 6/00.
- Lecturer at post-graduate level on "Conservation and Restoration of Historic Monuments-Materials and Conservation Treatments", Interdepartmental Graduate School, Dept. of Chemical Engineering - Dept. of Architecture, National Technical University of Athens, 11/98 - 6/99 and 11/01 -.

Supervisory activities

- Supervisor of One Conservation student working on their final year thesis, 1997.
- Participation in the supervisory committee of Three BS students at the Department of Mineral Resources Engineering of the Technical University of Crete, working their final thesis on the technology of ancient mortars, 1993-1995.

- Participation in the supervisory committee of One Ph.D. student at the Dept. of Chemical Engineering of the National Technical University of Athens, working their final thesis on the criteria and assessment of cleaning encrusted stone surfaces, 2002.

MAJOR RESEARCH GRANTS

- Main Researcher on the “Study on the provenance of yellow stains appeared on constructions of marble in Switzerland, Ecole Polytechnique Federale de Lausanne” (EPFL), Departement des Materiaux, Laboratoire de Conservation de la Pierre, 1992, funded by national foundation of Switzerland.
- Main Researcher on the “Study of decay mechanisms and weathering products of the materials used in the Venetian Fortifications, at Chania, Crete, Greece”, 1994-1995, Department of Mineral Resources Engineering of the Technical University of Crete, RECITE Program, Region of Crete.
- Main Researcher on the “Weathering problems of the materials used for the construction of the Venetian Fortifications, at Heraklion, Crete, Greece”, 1995, Department of Mineral Resources Engineering of the Technical University of Crete, funded by the Ministry of Culture and the Municipality of Heraklion.
- Main Researcher on the “Development of new materials for the structural and surface conservation of monuments, based upon studies of the original materials used for their construction”, 1995-1997, Foundation of research and Technology, Institute of Mediterranean Studies, funded by the Greek General Secretariat of Research and Technology.
- Researcher of the National Technical University of Athens, Section of Materials and Engineering, on the assessment of the consolidation products for the conservation of porous stones, 1997.
- Scientific Responsible on the “Study of the traditional mortars from the Venetian Villa, at Rodopos, Chania, Crete and guidelines for the preparation of new restoration mortars”, 2001, funded by the Municipality of Kolymbarion and Greek Association of Tourism.
- Main Researcher of the PENED project entitled “Early Metallurgy in Crete”, 2002-2004.

INVITED PRESENTATIONS IN CONFERENCES AND PARTICIPATIONS IN WORKSHOPS

1. Invited presentation in the Materials Research Society Symposium, April 1992, S. Francisco, USA.
2. Invited presentation in the CNR-IRIS Symposium, Progetto Finalizzato Edilizia, "Le pietre da costruzione", May 1993, Bari, Italy.
3. Invited participation in the Workshop “Conservation of Historic Stone Structures, Working Group I on Mechanisms and Rates of Stone Damage”, Dahlem University, Dahlem, 3-8 March 1996.
4. Invited participation as external expert of the relevant G7 COST Action, Bucharest, 19-21 January 2001.
5. Invited presentation in the Workshop on “Environmental effects on artworks” COST G7 with title: “Environmental impact on stones and mortars from historic buildings: case studies from Venice, Athens and Crete”, Herakleion 18-21 October 2001, Book of abstracts, COST G7.

6. Invited presentation in the interdisciplinary meeting of the Committee for the Preservation of the Acropolis Monuments, with title: “Laser cleaning of marble: procedure and evaluation of the effects”, Athens, 2001.
7. Invited presentation in the interdisciplinary meeting of the IGME-ICOMOS, with title: “Encrustation on Pentelic marble: cleaning and evaluation with laser assisted techniques”, Athens, 2001.
8. Invited presentation in the Workshop on “New technologies for the preservation of cultural heritage”, with title: “Innovative technologies for characterization and cleaning of encrustation”, Fraunhofer-Institut für Silicidforschung, Bronnbach Branch, Bronnbach, 2001.
9. Invited presentation, 7th International Conference on Non-Destructive Testing and Microanalysis for the Diagnostics and Conservation of Cultural and Environmental Heritage with title “Innovative techniques for the characterization of encrustation on Pentelic marble, from the Parthenon”, Antwerp, Belgium, 2-6 June 2002.

Reviewer:

1. Cement and Concrete Research
2. Water Air and Soil Pollution
3. Thermochemica Acta
4. Building and Environment
5. Surface and Interface Analysis
6. Applied Organometallic Chemistry
7. Progress in Organic Coatings
8. Analytica Chimica Acta
9. Construction and Building Materials

Number of citations: 386 (Scopus, h=9)