

CV

Vasilike Argyropoulos

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Career

Current Position: Professor of Metals Conservation

Dept. of Conservation of Antiquities & Works of Art, University of West Attica (former T.E.I. of Athens), (1998-today).

Member of the Senate: University of West Attica (2018-2019).

Director of Laboratory for the Study & Conservation of Ancient and Modern Cultural Properties – CULTLAB (2019-)

Previous Position: Assistant Director

The Wiener Laboratory, American School of Classical Studies at Athens (1997-1998).

Education

Bachelor of Applied Science in Chemical Engineering

University of Toronto, Canada (1984-1988)

Doctor of Philosophy

University of Bradford, England (1988-1992)

Thesis title: *Chemical Analysis of the Roman Samian Pottery Industry of Central Gaul*

Academic Affiliations

ENCoRE Representative for Department, University of West Attica (2001 onwards) and **Board member** (2003 onwards), European Network for Conservation-Restoration Education. Meet other ENCoRE representatives to discuss standardization of tertiary educational programs in Conservation across Europe as well as carried out evaluations of new members.

Convenor for CEN/TC 346: Conservation of Cultural Property Working Group 2 (2006-2012) “Materials constituting cultural property”. Responsible for co-ordinating and drafting standards for characterization of cultural property.

ERASMUS Academic Representative for Department, T.E.I. of Athens (1998-2018),

-Set up exchanges for conservation students between Greece and other E.U. countries.

-Set up and participate in exchanges for teaching staff between Greece and other E.U. countries. I have given lectures and taught in Austria, Finland, Holland, Norway, Sweden, and United Kingdom.

BROMECA Representative for Greece (2002 onwards), Bulletin of the Research on Metal Conservation is the official bulletin for the ICOM-CC Metals Working Group.

NGO Memberships

KEDE Member (1999-2002) Center for Research and Action for Peace – GREECE. A non-profit organization that undertakes projects dedicated to fostering a culture of peace. Main projects involve Balkan Health Education Program, Trafficking in Women, and others.

WINPeace Member (1999-2002) Greek-Turkish Women’s Initiative for Peace is a non-profit organization that organizes projects between Greece and Turkey to promote peace between the two nations. Main projects include Youth Camps (University and Secondary school students), Book translations, and various other activities in Greece and Turkey.

Educational Activities

Teaches at the Department of Conservation, University of West Attica, (former T.E.I. of Athens) from 1998 onwards courses in Metals Conservation (including open courses), Conservation of Ethnographic and Excavated objects, Conservation of Sculpture.

https://ocp.teiath.gr/courses/SAET_UNDER103/

https://ocp.teiath.gr/courses/SAET_UNDER104/

Committee Member and Academic co-ordinator for course for Master's Program in Conservation, University of West Attica, 2017-onwards.

Lecturer for the Joint Master's Program in Museum Studies with TEIA and University of Athens from February 2003 onwards

Lecturer for the Master's Program in Conservation Sciences at the University of Thessaloniki January 2011.

Lecturer in the Professional Development Seminar for Professional conservators and archaeologists, entitled "Problems, Conservation Techniques, and Demonstration of Excavated Archaeological Materials", a course held at National Research Institute of Demokritos between 14-15 December 2002 and October 23, 2004.

Participation in a national program to upgrade the Conservation Studies in Greece at the Department of Conservation, T.E.I. Athens, funded by the Ministry during July 1997 to June 2000. Activities included organizing seminars for students from lecturers in Greece and the E.U.

Academic co-ordinator and lecturer in Marine Archaeological Conservation, Conservation Studies, Vantaa, Finland, held between

October 2000 – March 2002

-organized and set up an international diploma course in Marine Archaeological Conservation held in Finland.

-gave lectures for course

-supervised undergraduate diploma theses for two students during their internships in Serbia and Australia.

Ph.D. Co-supervisor for M.-C Boileau at Dept. of Archaeology, University of Laval, Quebec, Canada (1998-2002).

Ph.D. Co-supervisor for Maria Giannoulaki at the Dept. Of History, Archaeology and Anthropology, University of Thessaly (2005-2011)

Ph.D. Co-supervisor for Michel Roggenbucke at the Dept. Of History and Archaeology, National and Kapodistrian University of Athens (2017-)

Ph.D. Co-supervisor for Dionisia Koutsi at Department of Geography and Regional Planning, School of Rural and Surveying Engineering, National Technical University of Athens (2019-).

Ph.D. Co-supervisor for Panagiota Psitiri at the Dept. Of Chemical Engineering, National Technical University of Athens (2019-)

Program Scientific Committee Member for the International Conference of ICOM-CC Metals Working Group for METAL2004, METAL2007, METAL2010, METAL2014, METAL2019

Awards - Grants

06/97-08/97: Electricité de France, Grant.

10/96-03/97: Canada-France Agreement for Co-operation and Exchanges in the Field of Museology, Grant.

1994-1996: Canadian Conservation Institute, Fellowship.

1993-1994: Canadian National Sectorial Council for Culture, Grant.

1988-1992: British Academy and Science and Engineering Research Council

1988: Canadian Nuclear Society, Award for Best Paper presented at the Conference.

1984: Grant from High School, Ontario, Canada.

Member

ICOM-CC

License: NAUI Scuba Diving (1988-)

PUBLICATIONS

Books/Chapters

1. Argyropoulos, V., Barret, M., Jackson, C., Ozola, I., Pike, A., Roudesli, S., and Zouaoui, H., 1993, *Salvage Conservation at the Museum of Carthage: A Manual for Artifact Conservation*, Musée de Carthage, Tunisia, 168 pages.
2. Karydas, A.G., Brecolouki, X., Pantazis, Th., Aloupi, E., Argyropoulos, V., Kotzamani, D., Bernard, R., Zarkadas, Ch., and Paradellis, Th., 2005, Importance of *in-situ* EDXRF Measurements in the Preservation and Conservation of Material Culture, *In: M. Uda et al. (eds.), X-rays for Archaeology*, Springer, Netherlands, pp. 27-53.
3. Editors: Vasilike Argyropoulos, Anno Hein, Mohamed Abdel Harith, 2007, *Strategies for Saving our Cultural Heritage*, Conference Proceedings held in Cairo, Egypt, 25 February – 1 March 2007, TEI of Athens: Athens, p. 252.
4. Editors: Dimitris Charalambous, K. Polikreti, B. Argyropoulos, 2007, *Good Practice Guide for the Protection of Outdoor Bronze Monuments in Greece*, Athens, 85 pages (In Greek).
5. Editor: Vasilike Argyropoulos, 2008, *Metals and Museums in the Mediterranean: Protecting, Preserving, and Interpreting*, TEI of Athens: Athens, p.350.
<https://www.slideshare.net/opencourses/metals-and-museums-in-the-mediterranean-protecting-preserving-and-interpreting>
6. V. Argyropoulos, S. Boyatzis, M. Giannoulaki, K. Polikreti, 2013, The role of standards in conservation methods for metals in cultural heritage. *In: P. Dillmann, A. Andriens, E. Angelini, D. Watkinson (eds.) Corrosion and conservation of cultural heritage metallic artefacts*. Cambridge : Woodhead Publishing Ltd., p.63. DOI:10.1533/9781782421573.5.478.
7. Argyropoulos, V. et al. (eds.), 2015, *Conservation of Marine Metal Shipwrecks and their finds in the Aegean Sea, Good Practice Guide*, Dionicos press, Athens, 204 pages. (in Greek)
<http://www.dionicos.gr/--200>

Peer-reviewed journals

8. Argyropoulos, V., 1995, "A Characterization of the Compositional Variations of Roman Samian Pottery Manufactured at the Lezoux Production Centre," *Archaeometry* **37**, 271-285.
9. Argyropoulos, V., 1995, "Sorting through Ceramic Assemblages using a Material Characterization Approach: Applying Scientific Analysis to the Study Mesopotamian Pottery," *Bulletin of the Canadian Society for Mesopotamian Studies* **58**, 47-53.
10. Argyropoulos, V., Rameau, J-J., Dalard, F., and Degriigny, C., 1999, "Testing the Hostacor IT as a Corrosion Inhibitor for Iron in Polyethylene Glycol Solutions," *Studies in Conservation* **44**, 49-57.
11. Selwyn, L.S., Sirois, J., and Argyropoulos, V., 1999, "The Corrosion of Excavated Archaeological Iron with Details on Weeping and Akaganeite", *Studies in Conservation* **44**, 217-232.
12. Argyropoulos, V., Degriigny, C., and Guilminot, E., 2000, "Monitoring treatments of waterlogged iron-wood composite artifacts using Hostacor IT-PEG400 solutions", *Studies in Conservation* **45**, 253-264.
13. Boileau, M.-C., Argyropoulos, V., Kennedy, G., and Fortin, M., 2001, "Une approche scientifique dans l'étude de la céramique de Tell'Atij", *Journées d'étude du Groupe de recherches en archéométrie du celat (1997-1999)*, Cahiers d'archéologie du CELAT no. 10, Série archéométrie, no. 1, p. 121-135.
14. Selwyn, L.S., McKinnon, W.R., and Argyropoulos, V., 2001, "Models for Chloride Ion Diffusion in Archaeological Iron", *Studies in Conservation* **46**, 109-120.
15. Stamatopoulou, E., Argyropoulos, V., Panagiaris, G., Papadakos, N., Christodoulou, P., and Koutselinis, A., 2003, Low-budget collection management at the Criminal Museum, School of Forensic Medicine, University of Athens, *MUSEOLOGIA*, **3**, pp. 95-100.

16. Selwyn, L.S. and Argyropoulos, V., 2005, Removal of Chloride and Iron ions from Archaeological Wrought Iron with Sodium Hydroxide and Ethylenediamine Solutions, *Studies in Conservation*, **50**, 81-100.
17. Pouli, P., Melessanaki, K., Giakoumaki, A., Argyropoulos, V., Anglos, D., 2005, Measuring the thickness of protective coatings on historic metal objects using nanosecond and femtosecond LIBS depth profiling, *Spectrochimica Acta B: Atomic Spectroscopy* **60**, 1163-1171.
18. Selwyn, L.S., Argyropoulos, V., 2006, Chlorine Determination in Archaeological Wrought Iron by Instrumental Neutron Activation Analysis, *J. Canadian Association for Conservation* **31**, 3-12.
19. Siatou, A., Charalambous, D., Argyropoulos, V. and Pouli, P., 2006, A Comprehensive Study for the Laser Cleaning of Corrosion Layers due to Environmental Pollution for Metal Objects of Cultural Value: Preliminary Studies on Artificially Corroded Coupons, *Laser Chemistry* **2006**, Article ID 85324, 7 pages, doi:10.1155/2006/85324.
20. Giannoulaki, M., Argyropoulos, V. et al. 2008, A Systematic Approach for Damage Assessment of Museum Metals Collections Based on Statistics and Portable Techniques: The Case Study of Ancient Messene, Greece, In: *ARCHAIA: Case Studies on Research Planning, Characterisation, Conservation and Management of Archaeological Sites*, (eds. N. Marchetti and I. Thuesen), BAR International Series **187**, pp.121-129.
21. Polikreti, K., Argyropoulos, V., Charalambous, D., Vossou, A., Perdikatsis, V., Apostolaki, C., 2009, Tracing correlations of corrosion products and microclimate data on outdoor bronze monuments by Principal Component Analysis, *Corrosion Science* **51**, 2416-2422.
22. Cano, E., Bastidas, D.M., Argyropoulos, V., Fajardo, S., Siatou, A., Bastidas, J.M., and Degriigny, C., 2010, Electrochemical characterization of organic coatings for protection of historic steel artefacts, *J. Solid State Electrochemistry* **14**, 453-463.
23. Argyropoulos, V., Polikreti, K., Charalambous, D., Simon, S., 2011, Ethical issues in research and publication of illicit cultural property, *Journal of Cultural Heritage* **12**, 214-219.
24. Arafat, A., Naes, M.S., Kantarelou, V., Haddad, N., Giakoumaki, A., Argyropoulos, V., Anglos, D., Karydas, A.-G., 2013, Combined in situ micro-XRF, LIBS, and SEM-EDS analysis of base metal and corrosion products for Islamic copper alloyed artefacts from Umm Qais museum, Jordan, *Journal of Cultural Heritage*, 14 (3), pp. 261-269.
25. Boyatzis, S., Douvas, C., Antonios, M., Argyropoulos, V., Siatou, A., & Vlachopoulou, M. 2012, Characterization of a Water-Dispersible Metal Protective Coating with Fourier Transform Infrared Spectroscopy, Modulated Differential Scanning Calorimetry, and Ellipsometry, *Applied Spectroscopy*, 66(5), 132A-144A and 475-608 (May 2012), pp. 580-590(11); <http://dx.doi.org/10.1366/11-06371>.
26. Argyropoulos, V et al., 2014, Museum Education and Archaeological Ethics: An Approach to the Illicit Trade of Antiquities. *Journal of Conservation and Museum Studies*, 12(1): 2, pp. 1-8, DOI: <http://dx.doi.org/10.5334/jcms.1021210>
27. Anna Karatzani, Alexandros Tagoulis, Vasilike Argyropoulos, Athina Alexopoulou, Stamatis Boyatzis et Maria Chatzidaki, The Introduction of Open and Free Academic Courses in Conservation of Cultural Heritage in Greece, *CeROArt* [En ligne], | 2014, mis en ligne le 03 août 2014, consulté le 13 octobre 2014. URL: <http://ceroart.revues.org/4231>
28. Batis, G., Zachropoulos, A., Zacharopoulou, E., Siova, E., Argyropoulos V., 2015 Dechlorination of large marine iron artifact using a novel technique involving impressed current. *Anti-Corrosion Methods and Materials* 62(4):259-269 · June 2015. <https://doi.org/10.1108/ACMM-11-2013-1326>
29. Vasiliki Kantarelou, Andreas-Germanos Karydas, · Dimosthenis Sokaras [...] · Vassilike Argyropoulos, 2015, In-situ scanning micro-XRF analyses of gilded bronze figurines at the National Museum of Damascus, *Journal of Analytical Atomic Spectrometry*, June 2015. <http://dx.doi.org/10.1039/C5JA00079C>
30. Angeliki ZACHAROPOULOU, Georgios BATIS, Vasiliki ARGYROPOULOU, Elodie GUILMINOT, 2016, The testing of natural corrosion inhibitors cysteine and mature tobacco for treating marine composite objects in PEG400 solutions, *International Journal of Conservation*

Science, 7 (1), Apr 2016:259-264.

31. V. Argyropoulos, A. Bei, S.C. Boyatzis, 2017, *The testing of a potassium polyacrylate (water) gel as pretreatment and storage of wet marine iron-organic composite artefacts*, In: Angelova, L., Ormsby, B., Townsend, J., Wolbers., R. (eds.). *Gels in the Conservation of Art*. London, Archetype Publications Ltd, pp. 267-269.
32. Argyropoulos, V.; Stratigea, A. Sustainable Management of Underwater Cultural Heritage: The Route from Discovery to Engagement—Open Issues in the Mediterranean. *Heritage* **2019**, 2, 1588-1613.

Peer-Reviewed Conference Proceedings

33. Argyropoulos, V., Selwyn, L.S., and Logan, J.A., 1997, "Developing a Conservation Treatment using Ethylenediamine as a Corrosion Inhibitor for Wrought Iron Objects Found at Terrestrial Archaeological Sites," *METAL 95*, James & James (Science Publishers) Ltd., England, p.153-158.
34. Argyropoulos, V., Karydas, A.G., Vossou Domi, A., Karabotsos, T., Kapatou, E., Perdikatsis, V.B., Economou, G., Zarkadas, C., and Charalambous, D., 2003, A Scientific Approach for the Conservation of the Outdoor Bronze Monument: Theodoros Kolokotronis, In: Conference Proceedings *Conservation Science 2002*, held in Edinburgh, Scotland 22-24 May 2002 (eds. J.H. Townsend, K. Eremin, and A. Adriaens) Archetype publications, p.141-147.
35. Argyropoulos, V., 2004, Public Campaigns for the Conservation of Outdoor Bronze Monuments in Greece, *Monumenti in Bronzo all'aperto, Esperienze di Conservazione a Confronto*, Nardini Editore, Italy, pp. 31-34.
36. Argyropoulos, V., Angelini, E., and Degrigny, C., (2004), Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean basin, *Metal04*, (eds. Ashton, J. and Hallam. D.), National Museum of Australia, Canberra, pp. 43-52.
37. Argyropoulos, V., Sakki, Z., Karydas, A.G., Zarkadas, C., Pouli, P., Melessanaki, K., Giakoumaki, A., Anglos, D., and Giannoulaki, M., 2005, Problems in stabilizing historic iron-bladed weapons displayed in an uncontrolled environment in the Criminal Museum of Athens, Greece, *Preprints of ICOM-CC Triennial Meeting in the Hague*, Vol. 1, pp. 293-300.
38. Giannoulaki, M., Argyropoulos, V., Panou, Th., Moundrea-Agrafioti, A., and Themelis, P., The feasibility of using portable X-Ray radiography for the examination of the technology and the condition of a metals collection housed in the Museum of Ancient Messene, Greece, accepted for publication in the upcoming preprints of the *VII Conference of Art Conservation-Restoration Students and Graduates, ART CONSERVATION-RESTORATION - STUDIES AND PRACTICE*, Toruń, 13 –15 October 2005.
39. Siatou, A., Argyropoulos, V., and Charalambous, D., Testing new corrosion inhibitor additives and coating for the long-term protection of metal collections in indoor uncontrolled environment accepted for publication in the upcoming preprints of the *VII Conference of Art Conservation-Restoration Students and Graduates, ART CONSERVATION-RESTORATION - STUDIES AND PRACTICE* Toruń, 13 –15 October 2005.
40. Argyropoulos, V., Giannoulaki, M., Anglos, D., Pouli, P., Harith, M.A., Elhassan, A., Karydas, A-G., Zarkadas, C., Kantarelou, V., Arafat, A., Haddad, N., 2007, Developing Innovative Portable Diagnostic Techniques and Approaches for the Analysis of Metal Artefacts from Museum Collections, In: *Proceedings of the 7th European Conference "SAUVEUR"*, (eds. Milos Drdacky and Michel Chapuis), 31 May – 3 June, 2006, Prague, Czech Republic, Vol. 1, pp.79-90.
41. Argyropoulos, V., Charalambous, D., Domi, A.V., Giannoulaki, M., Karabotsos, Th., Polikreti, K., Siatou, A., Drakaki, E., Sianoudis, I., Karydas, A.G., Zarkada, Ch., and Perdikatsis, V., A conservation strategy for documenting the corrosion of outdoor bronze monuments in Greece, *7th EC Conference*, Prague, held May 2006, Vol 2, pp. 887-890.
42. Degrigny, C., Argyropoulos, V., Pouli, P., Grech, M., Kreislova, K., Harith, M., Mirambet, F., Karydas, A., Arafat, A., al Saad, Z., Angelini, E., Ingo, G., Vassiliou, P., Cano, E., Hajjaji, N., Almansour, A., and Letardi, P., 2007, Innovative protection systems for large collection of metal

artefacts conserved in the Mediterranean Basin – PROMET, 7th EC Conference, Prague, held May 2006, Vol 2, pp. 879-882.

43. Alexopoulou, A., Argyropoulos, V., Avaritsiotis, Th., Charalambous, D., Ioakimoglou, E., Lambropoulos, V., Panagiaris, G., Pournou, A., Theoulakis, P., and Tsilaga, E., 2007, National research activities at the Department of Conservation of Antiquities & Works of Art (TEI-A) for the conservation, protection & management of cultural heritage, 7th EC Conference, Prague, held May 2006, Vol 2, pp. 1131-1134.
44. Giannoulaki, M., Argyropoulos, V., Michalakakos G., Panou, T., Kantarelou, V., Zarkadas, Ch., Karydas, A., Perdikatsis, V., and Apostolaki, C., 2007, A conservation survey of museum metals collections using portable scientific techniques: a case study in the Museum of Ancient Messene, Greece, In: *Metal 07, Interim meeting of the ICOM-CC Metal WG, Amsterdam, 17-21 September 2007*, (eds., C. Degriigny, R. van Langh, I. Joosten, and B. Ankersmit), Book 1, pp. 67-72.

45. Kantarelou, V., Zarkadas, Ch., Giakoumaki, A., Giannoulaki, M., Karydas, A.G., Anglos, D., and Argyropoulos, V., 2007, A novel approach on the combined in-situ application of LIBS and μ -XRF spectrometers for the characterization of copper alloy corrosion products, In: *Metal 07, Interim meeting of the ICOM-CC Metal WG, Amsterdam, 17-21 September 2007*, (eds., C. Degriigny, R. van Langh, I. Joosten, and B. Ankersmit), Book 2, pp. 35-41.
46. Degriigny, C., Argyropoulos, V., et al., 2007, The methodology for the PROMET project to develop/test new non-toxic corrosion inhibitors and coatings for the iron and copper alloy objects housed in Mediterranean museums, In: *Metal 07, Interim meeting of the ICOM-CC Metal WG, Amsterdam, 17-21 September 2007* (eds., Degriigny, van Langh, Joosten, Ankersmit), Book 5, 31-37.
47. Argyropoulos, V., et al., 2007, Testing of a new wax coating Poligen ES91009 and corrosion inhibitor additives used for improving coatings for historic iron alloys, In: *Metal 07, Interim meeting of the ICOM-CC Metal WG, Amsterdam, 17-21 September 2007*, (eds., C. Degriigny, R. van Langh, I. Joosten, and B. Ankersmit), Book 5, 10-15.
48. V. Argyropoulos, M. Giannoulaki, G.P. Michalakakos, and A. Siatou, 2008, A survey of the types of corrosion inhibitors and protective coatings used for the conservation of metal objects from museum collections in the Mediterranean basin, in *CSSIM conference proceedings held in Cairo, Egypt between Feb. 25- March 1, 2007*.
49. V. Argyropoulos, M. Giannoulaki, G.P. Michalakakos, and A. Siatou, 2008, A survey of the types of corrosion inhibitors and protective coatings used for the conservation of metal objects from museum collections in the Mediterranean basin, in *CSSIM Conf. Proc., Cairo, Egypt, Feb. 25- March 1, 2007*.
50. Cano, E., Bastidas, D.M., Argyropoulos, V., and Siatou, A., 2008, Electrochemical techniques as a tool for testing the efficiency of protection systems for steel objects, in *CSSIM conference proceedings held in Cairo, Egypt between Feb. 25- March 1, 2007*.
51. Siatou A., Argyropoulos V., Charalambous D., Polikreti K., Kaminari A., 2008, Testing new coating systems for the long-term protection of copper and iron alloy collections exposed in uncontrolled museum environment, in *CSSIM conference proceedings held in Cairo, Egypt between Feb. 25- March 1, 2007*.
52. Rapti, S., Margariti, C., Golfomitsou, S., Boyatzis, S., Pitsiri, P., & Argyropoulos V., 2010, Conservation of a Marine Composite (Copper/Textile) from the 19th century Shipwreck 'Patris in Greece'. In K. Strætkvern & E. Williams (eds.), *Postprints of 11th ICOM-CC Group on (Wet Organic Archaeological Materials (WOAM)) Conference*, (pp. 521-531). Greenville, North Carolina: ICOM-CC.
53. Argyropoulos, V. et al., 2010, The impact of the PROMET project for providing state-of-the-art and sustainable preservation for metals collections, In: *8th EC Conference on Sustaining Europe's Cultural Heritage*, held November 11-13th, 2007 in Ljubljana, Slovenia.
54. Argyropoulos, V. and Batis, G., 2013, Saving a Marine Iron Paddle Wheel Removed from the 1868 Steam Engine Shipwreck 'Patris' during an Economic Crisis in Greece. Ottawa : s.n., 2013. BIGSTUFF2013.
http://www.sciencetech.technomuses.ca/english/whatson/big_stuff_pdf/2013/sept25/argyropouloubigstuffpaper.pdf
55. Argyropoulos, V. et al., 2014, Relating the damage assessment of outdoor bronze and copper monuments in Greece to the environment, techniques of construction, and past cleanings, In: A. Azema and A. Texier, *Métal à ciel ouvert, Outdoor Metallic Sculpture from the XIXth to the early XXth century*, ICOMOS France, Paris, 214-226.
56. V. Argyropoulos, S.C. Boyatzis, M. Giannoulaki, A. Malea, A. Pournou, S. Rapti, A. Zacharopoulou, and Elodie Guilminot, 2015, Preliminary investigation of L-cysteine and mature tobacco as corrosion inhibitors for marine composite artefacts containing copper or iron alloys. *Proceedings of the Conference SCience in Technology (SCinTE2015)*, Technological Educational Institute of Athens, 328-331.

57. Argyropoulos, V. *et al.*, 2017, New approaches in stabilizing chloride contaminated ancient bronzes using corrosion inhibitors and/or electrochemical methods to preserve information in the patinas, In: Daehner J., K. Lapatin, and A. Spinelli (eds.), *Acta of the XIX International Congress on Ancient Bronzes*, Los Angeles. Los Angeles: The J. Paul Getty Museum (November 2017)
58. V. Kantarelou, A. G. Karydas, L. Mahfoud, A. Qurdab, M. Al-Saadi, and V. Argyropoulos, 2017, A defined protocol for *in-situ* micro-XRF compositional analysis of bronze figurines from the National Archaeological Museum of Damascus, Syria, In: Daehner J., K. Lapatin, and A. Spinelli (eds.), *Acta of the XIX International Congress on Ancient Bronzes*, Los Angeles. Los Angeles: The J. Paul Getty Museum (November 2017)
59. Stamatis C. Boyatzis, Andriana Veve, Galateia Kriezi, Georgia Karamargiou, Elena Kontou, and Vasilike Argyropoulos, 2017, A Scientific Assessment of the Long-Term Protection of Incralac Coatings on Ancient Bronze Collections in the National Archaeological Museum and the Epigraphic and Numismatic Museum, in Athens, Greece, In: Daehner J., K. Lapatin, and A. Spinelli (eds.), *Acta of the XIX International Congress on Ancient Bronzes*, Los Angeles. Los Angeles: The J. Paul Getty Museum (November 2017)
60. Argyropoulos, V. *et al.*, 2018, Preliminary investigation of L-cysteine as a corrosion inhibitor for marine composite artefacts containing copper or iron alloys, ICOM-CC WOAM conference proceedings, held at Florence Italy, May 2016.
61. V. Argyropoulos, N. Koumparou, A. Bei, M. Giannoulaki, A. Malea, S. Rapti, A. Pournou, S.C. Boyatzis, A. Tsompanidis, 2018, Tackling the difficulties in the conservation treatment and stabilization of marine composite medieval swords, ICOM-CC WOAM conference proceedings, held at Florence Italy, May 2016.
62. V. Argyropoulos, A.-Astrid Papanikou, P. Mardikian, 2019, *Conservation Treatment and Stabilization of Marine Composite Medieval Swords from Rhodes, Greece, Using Ammonium Hydroxide Solutions*, ICOM-CC METAL2019 conference proceedings, held in Nechatel, Switzerland, pp. 354-360.
63. V. Argyropoulos, A. Stratigea, forthcoming, Linking WWI and II Underwater Cultural Heritage to Sustainable Development in the Mediterranean: An Integrated Participatory Strategic Planning Approach, *International Conference in Management of Accessible Underwater, Cultural and Natural Heritage Sites: "Dive in Blue Growth"*, Athens, Greece, 16-18 October 2019.

RESEARCH ACHIEVEMENTS

Vasilike Argyropoulos has an undergraduate degree in Chemical Engineering and Applied Chemistry from the University of Toronto (1984-1988), and specialized in the application of analytical techniques for the characterization of ancient materials, which began with her Ph.D. studies in Archaeometry at the University of Bradford (1988-1992). Her Ph.D. specialized in the application of nuclear and chemical techniques to characterize ancient Roman ceramics for a provenance study of Roman Samian wares found in Britain to their ceramic production workshops in France using multivariate statistics. Since 1990, she has been involved in conservation of museum collections. It began with a 2-year contract (part-time) with an international project to set-up a conservation laboratory at the Museum of Carthage in Tunisia. At the time, she carried out a technological and conservation survey of the entire collection at the Museum of Carthage.

After her Ph.D., she was awarded a grant at the Historic Research Conservation Branch at Parks Canada, and began studying the corrosion of iron from Shipwrecks found underwater in the Marine Park of Fathom Five National Park. In 1994, she carried on with research into archaeological iron, and was awarded a fellowship (3 years) at the Canadian Conservation Institute to study the dechlorination treatments for iron artefacts, and the use of corrosion inhibitors for the stabilization of such material. **She continued with research into the application of corrosion inhibitors for iron-wood composite artefacts in France, at ARC'Antique (1997-1998), and specialized in application of electrochemical techniques to determine the best corrosion inhibitor for preserving such material.**

In September 1998, she worked at the Wiener Laboratory, at the American School for Classical

Studies in Athens, where she assisted the Director to help co-ordinate research for archaeometric studies of ancient materials excavated by the American School. After one year at the School, she was offered an **academic position at the Dept. of Conservation of Antiquities and Works of Art, at the University of West Attica in Athens.**

For the past 21 years, she has held an academic position at the University, and was successful in achieving full professorship. **She has been responsible for teaching and creating a laboratory in Metals Conservation, where through various grants, she was able to equip her Lab with state of the art equipment for diagnostic analysis and testing of cultural property made of metals, by acquiring 3-electrode potentiostat, portable X-Ray Radiographic Unit, portable X-Ray Fluorescence unit, which was specially designed for the analysis of outdoor bronze monuments, and recently with the acquisition of a portable XRD/XRF unit. She has also helped to raise funds for other equipment required for the accelerated aging of coupons to test coatings for metals at the Department.**

She has specialized in the application of non-destructive techniques for the analysis of metals collections, where **she raised funding and co-ordinated a 6th Framework European Research project (PROMET, 2004-2008) that developed a portable micro-XRF unit, and portable LIBS. The units were tested on museum collections in Greece, Malta, Jordan, and Syria under the framework of the project.** In addition, the research project developed new non-toxic corrosion inhibitors and coatings for the protection of metals collections found in the Mediterranean Basin. PROMET with its 21 partners used innovative ways to study, monitor, and protect metal objects from museum collections throughout the Mediterranean Basin in countries such as Egypt, France, Italy, Spain, Jordan, Arab Republic of Syria, Morocco, Greece, Malta, Turkey and Czech Republic.

She has also been awarded many national grants to study and research new techniques for the application of cleaning or diagnostic analyses of outdoor bronze monuments, and historic metal collections, as well as set-up a conservation laboratory at the Museum of Hama in Syria. She is often asked to carry out contract work for museums and municipalities for difficult conservation projects in the corrosion study and treatment of metal objects. For example, **the conservation of an 8 ton iron paddle wheel lifted from the Shipwreck “Patris” (1868) off the coast of Kea in Greece.** Given the size of the object, a novel technique using impressed current has been applied to carry out in-situ dechlorination, similar to the methods used to treat iron-reinforcement bars in concrete. Finally, her most recent national funded research project dealt with research on the corrosion and *in-situ* monitoring of iron shipwrecks in the Aegean Sea, and developing treatments for marine composite objects (2013-2015).

Her time in Europe for the past 22 years has allowed for her to participate in many committees involved in the conservation of cultural property. **As the Convenor of European standards’ technical committee for the conservation of cultural property, CEN/TC 346 WG2, *Materials constituting cultural property* (2012-2016), as well as a board member for ENCoRE (European Network for Conservation-Restoration Education),** and she believes strongly in the standardization of conservation practices and education throughout Europe and the Mediterranean basin in order to achieve international or trans-national mobility and quality assurance in the field of conservation of cultural property. Furthermore, she has supervised Ph.D. students and undergraduate dissertations involving research in conservation and analysis of ancient ceramics and metals, as well as have organized many international workshops, conferences, and diploma courses for conservation and conservation science.

Apart from her work in research into metals and ceramics, she have served on working groups (such as CEN/TC 346), where she is the Convenor for drafting standards for the analysis of stone, mortars, wood, permanent paper for archival collections, metals, and wall paintings. Her work in the Mediterranean region has exposed her to the very difficult topic surrounding illicit trafficking of cultural property. Her involvement began with helping to organize a one-day satellite meeting for ICOM-CC *Legal Issues In Conservation* in Cairo in 2007 with a 3-day conference for her 6th FF project PROMET. She published a paper on *Ethical issues in research and publication of illicit cultural property*, where she carried out a review on research and scientific publications of ancient materials without provenance published in peer-reviewed journals. Her interest in this topic along with her strong collaboration with the Egyptian Museum of Cairo, and its then Director Wafaa El Saddik, led her to be awarded a **European grant for the project**

entitled *Education for Cultural Heritage Professionals and the Public on Illicit Trafficking of Antiquities* (under the EC Culture Programme 2010-2012). The project that began in January 2010 with the main objective (www.witnessthepast.gr) to carry out a publicity campaign for the general public in one of the most visited museums in the world, The Egyptian Museum of Cairo and its Children's Museum, and to implement a didactic children's program in Egypt, Greece, Cyprus, Jordan, and Germany on the importance of proper excavation of archaeological sites. The main thrust of the project was to provide an impact on the prevention of looting of antiquities through the pillaging of sites that have yet to be identified or inventoried. Moreover, the project carried out workshops to educate Cultural Heritage (CH) professionals on the state of the art scientific tools to help authenticate and fingerprint looted antiquity from clandestine excavations, as well as tagging techniques to protect objects in case of theft from museums. The project produced best practice guidelines or a "Museum theft response plan" aimed at law enforcement and museum professionals for stolen goods. Two workshops were organized on the topic at the Hellenic Ministry of Culture in February 2010 and Department of Antiquities in Amman, Jordan (June 12-13, 2011). The workshops were organized in collaboration with the other project's co-organizers UNESCO and Rathgen Research Laboratory, Berlin Museum.

Vasilike Argyropoulos main contribution to conservation science has been to carry out research into the corrosion of terrestrial and marine iron and composite artefacts including monitoring programs for iron shipwrecks, and to test corrosion inhibitors and treatments to help stabilize such material long-term. She has also carried out coatings research for outdoor bronze monuments and indoor museum metals collections. She understands that conservation science requires developing standard approaches to develop and test such materials, as well as non-invasive ways to analyze or monitor the condition of metal objects *in-situ*. Her publications reflect not just the testing and application of new materials and non-destructive techniques for metals but also considers the best approach to be taken to survey large collections. Such an approach must be cost-effective and at the same time provide the best conservation plan to help preserve metals collections long-term. Finally for her, education for the general public on conservation of cultural property is the key to ensure a far-reaching impact in the field, and all her projects try to incorporate education as a key element.

RESEARCH PROJECTS

European Projects

1. Title: *Witness the past: education programs for the public and CH professionals on illicit trafficking of antiquities* (www.witnessthepast.gr)
Budget: 400.000 Euros
Funding Source: EC Culture Programme 2007-2013, No. 160674-CU-1-2009
Role: Project Coordinator
Duration: January 2010-2012
Co-organisers: Egyptian Museum of Cairo, ANEMON Productions, C.A.T.S. Alliance for Children Tradition and Social Engagement, Rathgen Research Laboratory and Berlin State Museum, Dept. of Archaeology University of Cyprus, Marfin Laiki Bank Cultural Centre in Cyprus, Dept. Of Antiquities, Jordan, and Section of Museums, UNESCO
2. Title: *Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean basin*
Budget: 4.000.000 Euros
Funding Source: EC INCO MED STREP project No. 509126, PROMET
Role: Project Coordinator
Duration: November 2004-2008
Co-organisers: 21 partners from Europe and Jordan, Egypt, Syria, Tunisia, Algeria and Morocco
3. Title: *Establishing EQF for the conservation field throughout Europe*
Budget: 300.000 Euros
Funding Source: EC LEONARDO DA VINCI ECPL project No 2005 [MT/05/B/F/PP-173.00]
Role: Project leader for the T.E.I. of Athens
Duration: January 2007-2009
4. Title: *Saving Outdoor Bronze Monuments*
Budget: 200.000 Euros
Funding Source: EC Culture 2000 N°2000-1043/001-001 CLT-CA1A,
Role: Project leader for the T.E.I. of Athens
Duration: October 2000-December 2001
5. Title: *A Multilingual Conservation Dictionary*
Budget: 200.000 Euros
Funding Source: EC Connect project No A2/GR.83-SI2.171361
Role: Scientific leader responsible for managing and organizing the production of a multilingual conservation dictionary in multimedia and printed format with 5 European countries (Greece, Finland, Netherlands, U.K., and Germany).
Duration: December 1999 – July 2001

International Projects

1. (2007-2009) Principal Researcher for project funded by the Hellenic Ministry of Foreign Affairs, project entitled: Documentation, Conservation and Presentation of the Hellenistic Collection of the Archaeological Museum of Hama in Syria.

2. (1996-1997) Researcher as part of Canada-France Exchange Program to study new materials for the preservation of archaeological waterlogged iron-wood materials. Part 2 at ARC'Nucléart, Grenoble, France and Part 1 at ARC'Antique, Nantes, France
3. (1994-1997) Post-doctoral Research Fellowship, Canadian Conservation Institute, Ottawa, Canada - carried out research on the application of corrosion inhibitors to preserve archaeological iron.
4. (1993-1994) Post-doctoral Research Scholarship, Historic Resource Conservation Branch, Canadian Heritage, Ottawa, Canada - Studied iron corrosion for the underwater shipwrecks at Fathom Five Provincial Marine Park in Lake Huron, Ontario.
5. (1990-1993) Principal Researcher, University of Toronto financed under the Canadian International Development Agency – carried out conservation survey of the entire collection at the Museum of Carthage, Tunisia and organized and set-up a conservation laboratory at the Museum.

National Projects

1. Title: *New Approaches and Application of Electrochemical Techniques and Corrosion Inhibitors for in-situ Monitoring of Shipwrecks and Treatment of recovered marine composite artefacts containing metal*
Budget: 100.000 Euros
Funding Source: ARCHIMEDES III: Education and Lifelong Learning of the NSRF
Role: Co-ordinator
Duration: 2013-2015.
2. Title: *Saving wooden shipwrecks in the Mediterranean marine ecosystem: Research, development and application of innovative methods of in situ protection, acronym MERMAID*
Funding Source: THALIS: The co-operational program Education and Life Long Learning NSRF and co-funded by the Greek Ministry of Education and the European Union
Role: Principal Researcher
Duration: 2012-2015
3. Title: *The conservation treatment of the Paddle Wheel removed from the Shipwreck Patris (sunk in 1868) using electrochemical methods*
Budget: 55.000 Euros
Funding Source: Municipality of Syros and the Industrial Museum of Syros
Role: Coordinator
Duration: January 2008-onwards
4. Title: *The application of new technologies for the cleaning of archaeological and historical metal objects*
Budget: 50.000 Euros
Funding Source: Ministry of Education (Archimedes II)
Role: Coordinator
Duration: January 2005-December 2007
5. Title: *Environmental consequences and protection of outdoor bronze monuments in Greece*
Budget: 70.000 Euros
Funding Source: Ministry of Education (Archimedes II)
Role: Principal Researcher
Duration: January 2005-December 2007
6. Title: *Research on the development of acceptable standards (standardization) in the field of conservation/restoration of CH*
Budget: 50.000 Euros
Funding Source: Ministry of Education (Archimedes II)

Role: Principal Researcher
Duration: January 2005-December 2007

7. Title: *Study and Preservation of 32 outdoor monuments for the Municipality of Nea Smyrni*
Budget: 63.000 Euros
Funding Source: Municipality of Nea Smyrni
Role: Project leader
Duration: August 2002-2004

8. Title: *Research into new materials for conservation of archaeological iron*
Budget: 3.000 Euros
Funding Source: T.E.I. of Athens
Role: Project Leader
Duration: September 1999-September 2001.