
Curriculum Vitae

Georgios Th Karagiannis

Electrical, telecommunication and Computer Engineer, PhD

Graduated Aristotle University of Thessaloniki

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Personal Details

Name and Surname: Georgios Karagiannis

Date of Birth: 1st of September 1973

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Family: He is married with Mrs Hellen Fragaki Archaeologist and has five children (Theodoros 18 years old, Emmanuel 16 years old, Maria 13 years old, Konstantina 7 years old and Kondilio 5 years old).

e-mail: g.karagiannis@artdiagnosis.gr,

URL: <http://www.ormyliafoundation.gr>

He is member of Greek Engineering Chamber and IEEE.

Military Services: Fulfilled, Degree: Sergeant (2nd ranked)

Studies

June 1991: Graduated high school of N. Moudania.

July 1991: Entered the School of Engineering, Electrical and computer Engineering of Aristotle university of Thessaloniki

July 1997: Graduated the School of Engineering, Electrical and computer Engineering of Aristotle university of Thessaloniki.

Diploma Thesis: «Experimental simulation in the lab of the excitation of electromagnetic radiation in the VHF/UHF band of low power distribution for the study of the effect of this radiation to the tissues.

2008: Phd Thesis: “Non destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy” School of Engineering, Electrical and computer Engineering, Aristotle University of Thessaloniki (2008).

2012-2015: Postdoctoral research: “Development of a non-invasive system for the early detection of melanoma with the combined use of acoustic microscopy from 50 up to 100MHz, probe microscopy, optical microscopy and diffuse reflectance spectroscopy and imaging from 0.4μm up to 10μm” in the Medical school of Thessaly in collaboration with the Fraunhofer institute of medical and cognitive computing in Darmstadt, Germany.

During his studies to the high school, he was awarded for several times the 3rd price on National Mathematic Olympiads.

Current position

- ✚ He is technical and scientific head of the “ORMYLIA” Foundation.

During this period “ORMYLIA” Foundation managed to be recognized as a European research infrastructure in the field of cultural heritage objects documentation using high technological means and especially nondestructive infrastructures (desktop as well as mobile ones).

During this period “ORMYLIA” Foundation applied the art diagnosis techniques that was pioneered in its Lab in medical diagnosis projects for Melanoma and Alzheimer. Ultrasound Elastography as well as spectroscopic mapping techniques were also involved in the medical diagnosis in research level for the medical center of “ORMYLIA” Foundation.

- ✚ He is technical and scientific responsible of the departments related to development of novel nondestructive methods and techniques for the documentation of art objects, database development and information processing systems since 1998-2010.
- ✚ He is a scientific collaborator of the «ORMYLIA» Foundation since January 1997, participating to the setup of the “ORMYLIA” Foundation laboratories from scratch. In the frame of this collaboration he has developed significant infrastructure for the laboratory operation (see related patents and publications).
- ✚ In the frame of this collaboration he has been the scientific and technical manager for research and development projects of almost 13M€ budget.



He has also been the quality control responsible engineer according to ISO 17025 laboratory measurements applied to all the materials that permit the propagation of high frequency ultrasonic waves in them:

- Measurement of thickness and acoustic velocity of materials according to EN 14127 (Non-destructive testing - Ultrasonic Thickness Measurement).

He is the quality control responsible engineer according to ISO 17025 laboratory measurements applied to all the materials that absorb energy in the ultraviolet up to the mid infrared area of the electromagnetic spectrum:

- Spectral reflection coefficient in diffuse reflectance mode from ultraviolet up to the mid infrared area of the spectrum (200nm -5000nm) according to ASTM E-903 – 96 (Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres)

Due to the fact of the Greek special financial market and due to family involvement he has always been involved in the actions of his collaborators technical office performing electromechanical studies. So today, he is the Electrical and Mechanical Engineer of the technical office activated in Chalkidiki, Greece in the frame of the operation of which he has issued numerous of studies and installations of electro – mechanical projects of total budget of 2M€.

-  He is certified engineer for the study and inspection of the energy performance of buildings according to EN15217.
-  He participated to the setup and he is also collaborator of a company named HOVERNET having the responsibility for the development of projects related to knowledge management applied systems to the market.

The technical office, in which his one of the owner's engineer, actions permit him to interconnect the research actions on non-destructive testing techniques with their application to industrial oriented projects.

Professional Experience

- [1] Scientific manager for ORMYLIA Foundation participation to European Research Infrastructure for Heritage Science (E-RIHS) "E-RIHS", <http://www.e-rihs.eu/>.
Budget of the project 7,000,000.00€. Budget of OF: 30,000.00 €, Duration: 2017 -2018.
- [2] Scientific manager of the project Multimodal Scanning of Cultural Heritage Assets for their multilayered digitization and preventive conservation via spatiotemporal 4D Reconstruction and 3D Printing, "SCA4RECO".
Budget: 3,762,763.00 €, Duration: 2015 -2018.
- [3] Scientific manager for the action of the connection of the research activity of IPERION (Integrated Platform for the European Research Infrastructure ON Cultural Heritage) project with the SMEs in the field.
Budget of the project: 7000000€. Budget of OF: 390000€, duration: 2015 -2019.
- [4] Συμμετοχή στο ICT 7th Framework Programme με θέμα: "RAPP– Robotic Applications for Delivering Smart User Empowering Applications". Επιστημονικός υπεύθυνος στα πλαίσια της συμμετοχής του Διαγνωστικού Κέντρου του Ιδρύματος «ΟΡΜΥΛΙΑ» στο RAPP.
Budget OF: 278,000.00 €. Διάρκεια: 2014 -2016
- [5] Participation to ICT 7th Framework Programme with subject: "RAPP– Robotic Applications for Delivering Smart User Empowering Applications". Scientific responsible for Ormylia Foundation.
Budget: OF: 278,000.00 €. Duration: 2014 -2016
- [6] Scientific and technical project manager: " ORMYLIA FOUNDATION CREATING INFRASTRUCTURE MODERNIZATION AND WELFARE". Development of medical equipment and ultrasonic elastikografias and building infrastructure.
Budget: 3,500,000.00 €, Duration: 2013 -2015
- [7] Project Coordinator, Tomographic documentation in time and in place of archaeological excavations using micro-to-meter-level "tomography" for specialized research and wide-audience education purposes, Cooperation framework,
Budget: 825,000.00€, Duration 2012-2015.
- [8] Postdoctoral research on the project "Development of a non-invasive system for the early detection of melanoma with the combined use of acoustic microscopy from 50 up to 100MHz, probe microscopy, optical microscopy and diffuse reflectance spectroscopy and imaging from

0.4µm up to 10µm” in the Medical school of Thessaly in collaboration with the Fraunhofer institute of medical and cognitive computing in Darmstadt, Germany.

Budget 150,000.00€, Duration 2012-2015.

- [9] Scientific responsible for WP8 and member of the steering committee of the project CHARISMA (Cultural Heritage Advanced Research Infrastructures: Synergy for a Multidisciplinary Approach to Conservation/Restoration) as well as for the development of FTIR microimaging system for in situ analysis of materials on art objects as well as monuments (<http://www.charismaproject.eu/contacts.aspx>).

Budget for WP8: 1,000,000.00 €. Budget for Ormylia Foundation: 538,000€, Duration: 2009 - 2012.

- [10] Project manager for Ormylia Foundation for the preparation of the proposal for the participation of the Greek National Infrastructure on Extreme Lasers to the European Infrastructure ELI (Extreme laser Infrastructure).

Budget: 5000€, Duration: 2010.

- [11] Project Coordinator of the European RTD INCO project entitled: “InfrArtSonic”, «Development of a novel and integrated portable non destructive analysis system for the documentation of artworks» (www.infrartsonic.org),

Budget: 1.600.000 EYPΩ. Duration: 2006 -2009

- [12] Greek National Project entitled: 05AKMΩN83 « Development of knowledge management system for the data provided by the art objects documentation»

Budget: 400.000 €. Duration: 2006-2008.

- [13] Project manager of the Greek National Project entitled : «EIKONOTNΩΣIA» Development of knowledge management system of scientific data and metadata related to the documentation of Byzantine painted icons using intelligent systems based on ontological indexing, retrieval and presentation of the provided information

Budget: 700.000€. Duration: 2006-2007

- [14] Project manager of the project entitled: «Update and setup of the non destructive testing infrastructure of the Ormylia Foundation. In this project the infrastructure of Ormylia Foundation was enriched with acoustic microscopy, IR FPA imaging and Atomic Force Microscopy systems.

Budget 450.000 €. Duration 2005-2007.

- [15] Responsible Joint Research Activity 2 (JRA2) for ORMYLIA Art Diagnosis Centre in the frame of EU-ARTECH project (www.eu-artech.org). Development of an in-situ FTIR materials mapping imaging device.

Budget: 280.000 € για το JRA2 (www.eu-artech.org). Duration : 2003 -2008

- [16] Responsible Engineer for the project of the development of knowledge management system for the documentation of cultural heritage objects of the Institute of Balkan Studies.

Budget: 100.000 €. Duration 2006

- [17] Responsible Engineer for the project of the development of knowledge management system for the documentation of cultural heritage objects entitled «BYZANTIO» of the Museum of Byzantine Culture f Thessaloniki, Greece.

Budget: 100.000 €. Duration 2004-05.

- [18] Participation to the IST 5th Framework Programme entitled: "Generic platform for the creation of interactive art experience in mixed reality" –proposal acronym: ART-E-FACT. Responsible from the Ormylia Art Diagnosis Centre in the project ART-E-FACT, URL: (www.art-e-fact.org)

Budget (for OADC) 382.000€. Duration : 2002 -2005

- [19] Project and scientific manager of the Greek National Project entitled: 02 ΠΡΑΞΕ 37 «Study of the industrial exploitation of the multidimensional system for the documentation of art objects».

Budget: 44.000 €. Duration : 2003

- [20] Project and scientific manager of the Greek National Project entitled: 02 ΠΡΑΞΕ 36 «Study of the industrial exploitation of the and further development of a infrared reflectoscopy system with tuneable wavelength form 200nm up to 6000nm».

Budget: 44.000 €. Duration : 2003

- [21] Participation to the LABSTECH. JOINT ACTIVITY 3, Tasks 3 – 4 "Elaboration of optimal forms for archiving analysis data towards uniformity of Data archiving".

Duration : 2001-2004

- [22] Project manager of the project entitled «Platon 2000» with subject: «Multispectral acquisition through different sensors» in collaboration with (Ecole National Supérieure des Télécommunications - Paris).

Budget: 11.738 €. Duration : 2000-2002

- [23] Technical Consultant of the Prefecture of Chalkidiki authority for information technology systems installation.

Budget: 80.000 €. Duration 2001-02

- [24] He has managed industrial projects mainly related to the development of database systems and knowledge management.

- [25] He has issued several studies for the installation of informational systems in public organizations.

- [26] Participated to the project of the installation of the «Ormylia» Art Diagnosis Centre funded by the European Investment bank (EFTA) and the Greek Ministry of Finance.

He was responsible for the development of the database and image processing laboratories as well as the multispectral acquisition laboratory for the non destructive testing of art objects (Πολυφασματική λήψη εικόνων).

Budget:600.000€. Duration : 1997 – 2001

- [27] Participated and managed the project in the Greek framework (ΕΠΕΤ II) entitled: "Development of a infrared high resolution and fidelity reflectoscopy system with tuneable wavelength from 200nm up to 6000nm using CCD sensors sensitive from 1µm up to 6µm."

Budget: 153.000€. Duration : 1998-2000

- [28] In 1997 collaborated with the company related with database development ANONYMUS Ltd developed database systems based on Omnis 7.3, ORACLE 7.3.3 and operating system MACOS.

- [29] During his last year of studies (1996) from 1/9 till 31/10 he collaborated with the Hellenic telecommunication Authority and especially he worked to:

-Digital Node AXE 211

-Radio link and antennas department

[30] During his studies to the school of engineering he participated to the research projects with titles:

a) Optical Image Analysis

b) Power Optimization of Dye Laser (βελτιστοποίηση λειτουργίας Dye-Laser)

In the school of engineering in Lodz, Poland through the IAESTE programme.

[31] During his studies in the school of Engineering he was employed to a technical company dealing with the study and installation of telecommunication and informatics projects. He studied the antennas radiation systems for UHF and VHF band (television and radio) using the tools provided by EDX Engineering: SHDMAP, MSITE. The studies that were performed are indicatively described:

α. E/M field coverage

β. Radio link

γ. Antennas radiation systems

δ. Study of protection (shielding) systems from lightning of telecommunication base stations

ε. Electrical installation

He has participated to the installation of the stations for the emission of radio waves in the bands of VHF and UHF.

[32] During his third year of studies (1994) from 1/7 till 31/8 1994 he collaborated with the Hellenic telecommunication Authority and especially he worked to:

a. Digital Node AXE 211

b. Pulse Code Modulated systems

c. Central cable distribution system

[33] In (1993) during his second year of studies he was worked to the National Bank of Greece.

Evaluator / Reviewer- Member of scientific committees

He is member of the editorial board of the journal: Recent Patents on Chemical Engineering (impact factor 4.94).

He has been member of scientific committees for the evaluation of European research projects.:

[1] FP7 Cooperation Specific Programme, Call FP7-ENV-2007-1 (OJ C316 of 22 December 2006) – Activity “Environmental Technologies” – Topics on cultural heritage research (ENV.2007.3.2.1.1, ENV.2007.3.2.2.2). He has been also member of the Final Review Panel.

[2] FP7 Cooperation Specific Programme, Call FP7-ENV-2009-1 () – Activity “Environmental Technologies” – Topics on cultural heritage research (ENV.2007.3.2.1.1, ENV.2007.3.2.2.2).

He is also reviewer to several journals and conferences such as

- [1] Member of the scientific committee and reviewer to IEEE 3rd International Conference on Information & Communication Technologies: From Theory to Applications - ICTTA'08 - April 7 - 11, 2008 Umayyad Palace, Damascus, Syria.
- [2] Member of the scientific committee and reviewer to IEEE IST 2018 October 16th-October 18th , 2018 Krakow, Poland.
- [3] Recent Patents on Chemical Engineering, Bentham Science Publishers Ltd.
- [4] Review of Scientific Instruments, American Institute of Physics.
- [5] Elsevier, International Journal of Pure and Applied Analytical Chemistry
- [6] IEEE instrumentation and measurements

Patents, Books, Publications, Announcements, Lectures

Patents

- [1] 3D Spectracoustic system: A modular, tomographic, spectroscopic mapping, non-invasive imaging diagnostic system. Case study: detection of small starting developing tumors like melanoma, Application No 20150100423, September 2015.
- [2] 3D Spectracoustic system: A modular, tomographic, spectroscopic mapping, non-invasive imaging diagnostic system. Case study: detection of small starting developing tumors like melanoma, Application PCT 20150100423, September 2015.
- [3] 3D-SPEKTROAKUSTISCHES SYSTEM: EIN MODULARES, TOMOGRAPHISCHES, SPEKTROSKOPISCHES ABBILDUNGS-, NIGHTINVASIVES BILDGEBUNGSDIAGNOSE-SYSTEM, P21401DEPCT, Application on 5/4/2018 with priority September 2015.
- [4] Art Objects documentation system "ArtBase", G. Karagiannis, B. Alexopoulos, S. Daniilia
National Patent No: 20030100369 (2004)
- [5] Multispectral Spectroscopy Through Tunable Multispectral Reflectoscopy Between 200 nm and 6000 nm, C. Salpistis, G. Karagiannis, Y. Chrysoulakis
National Patent No: 20030100368 (2004)
❑ WO 2005/024362 (Application Number PCT/GR2004/000005)

Books

- [1] M. STEFANIDOU, K. MATZIARIS, G. KARAGIANNIS, Efficacy to weathering and re-treatability of composite protective nano-structured coating onto Pendelikon marbles, Geological Society of London (accepted) for publication.
- [2] G. Karagiannis, S. Sotiropoulou, Sister Daniilia and D. Mamaginidis, The art-e-fact project database system. A general conception for the documentation of artworks based on rich and multilevel technical investigation. Electronic Imaging & the Visual Arts, EVA 2005 Florence proceedings, Editors Vito Cappellini and James Hemsley, Pitagora Editrice Bologna, March 2005, p. 107-111, ISBN: 88-371-1546-6.
- [3] Sister Daniilia, Sophia Sotiropoulou, Dimitrios Bikiaris, Christos Salpistis, Georgios Karagiannis and Yannis Chrysoulakis, Diagnostic methodology for the examination of Byzantine frescoes and icons. Non-destructive investigation and pigment identification. Comprehensive

Analytical Chemistry volume XLII: Non - Destructive Microanalysis of Cultural Heritage Materials, Janssens and Van Grieken (Eds.) Elsevier 2004 (Book Chapter), ISBN: 0-444-50738-8.

- [4] Chr. Salpistis, G. Karagiannis and Y. Chrysoulakis, Multispectral Spectroscopy Through Tunable Multispectral Reflectoscopy Between 200 nm and 3500 nm. [A powerful, under development tool of investigation, on painted artworks], Molecular and Structural Archaeology: Cosmetic and Therapeutic Chemicals (NATO Science Series II: Mathematics, Physics & Chemistry vol. 117), Publisher: Kluwer Academic Publishers, Georges Tsoucaris, Janusz Lipkowski (Editors), September 2003, p.73-83, ISBN: 1-4020-1499-6.

Journals

- [1] Sofia Reppou, Emmanouil G. Tsardoulis, Athanassios Kintsakis, Andreas Symeonidis, Pericles A. Mitkas, Fotis E. Psomopoulos, G. Karagiannis, Cezary Zielinski, Vincent PrunetJean-Pierre Merlet, Miren Iturburu, Alexandros Gkiokas, RAPP: A Robotic-Oriented Ecosystem for Delivering Smart User Empowering Applications for Older People, International Journal of Social Robotics · June 2016, DOI: 10.1007/s12369-016-0361-z,
- [2] M. STEFANIDOU, K. MATZIARIS, G. KARAGIANNIS, Efficacy to weathering and re-treatability of composite protective nano-structured coating onto Pendelikon marbles, Geological Society of London (accepted for publication), 2015.
- [3] Maria Stefanidou, Aspasia Karozou, Katia Matziaris and George Karagiannis, Experimental study of the effectiveness of nano-modified protective coatings on traditional bricks," Journal of Nanomaterials, 2015
- [4] I. Grigoriadou, K. M. Paraskevopoulos, M. Karavasili, G. Karagiannis, A. Vasiliou, D. Bikiaris, HDPE/Cu-nanofiber nanocomposites with enhanced mechanical and UV stability properties, Journal of Polymer Degradation, Composites B, 2013.
- [5] Maria Stefanidou, Katia Matziaris, Georgios Karagiannis, Hydrophobization by means of nanotechnology on Greek sandstones used as building façades, Geosciences 2013, 3, 30-45; doi:10.3390.
- [6] D. Bikiaris, D. Alexiadis, A. Damtsios, I. Koutri, G. Karagiannis, Acoustic microscopy for real time and non-destructive analysis of tablet coating thickness, International Journal of Pharmaceutics, September 2012.
- [7] Georgios Karagiannis, Dimitrios Alexiadis, Argirios Damtsios, Georgios Sergiadis and Christos Salpistis, 3D non destructive "sampling" of art objects, IEEE instrumentation and measurements, vol.60, issue 9, Pages 1-28, September 2011.
- [8] K. Matziaris, M. Stefanidou and G. Karagiannis, Impregnation and super hydrophobicity of coated porous low-fired clay building materials, Progress in Organic Coatings 72 (2011) 181-192, Elsevier, 2011.
- [9] K. Vavliakis, A. Symeonidis, G. Karagiannis and P. Mitkas, An integrated framework for enhancing the Semantic Transformation, Editing and Querying of Relational Databases, Elsevier Expert Systems With Applications, vol 38, Pages 3844-3856, April 2011.
- [10] Georgios Karagiannis, Dimitrios Alexiadis, Argirios Damtsios, Georgios Sergiadis and Christos Salpistis, Diffuse reflectance spectroscopic mapping imaging applied to art objects materials determination from 200nm up to 5000nm, Review of Scientific Instruments (RSINAK), vol. 81, issue 11, November 2010.

- [11] G. Karagiannis, K. Vavliakis, S. Sotiropoulou, Sister Daniilia, A. Damtsios, D. Alexiadis, C. Salpistis Towards «Cultural» Intelligence: Applying Signal Processing and Semantic Web Technologies in the analysis of Byzantine Iconography, IEEE Intelligent systems, May- June 2009.
- [12] S. Sotiropoulou, S. Daniilia, K Andrikopoulos, G Karagiannis, Y. Chrysoulakis, The Artistic Traits of Gyzis: a First Diagnostic Approach to His Paintings BAR INTERNATIONAL SERIES 1746, 603, 2008.
- [13] Sister Daniilia, Elpida Minopoulou, Fr. Demosthenis Demosthenous, Georgios Karagiannis, A comparative study of wall paintings at the Cypriot monastery of Christ Antiphonitis: one artist or two?, J. Archaeol. Sci. (2007).
- [14] Georgios Karagiannis, Christos Salpistis, Georgios Sergiadis, Ioannis Chrysoulakis, Non-destructive multi-spectral reflectoscopy between 800 nm and 1900 nm: An instrument for the investigation of the stratigraphy in paintings, Review of Scientific Instruments (RSINAK), vol. 78, issue 6, June 2007.
- [15] Sister Daniilia, Sister Maximi, I. Papaggelos, A. Strati, D. Bikiaris, S. Sotiropoulou, G. Karagiannis, C. Salpistis and Y. Chrysoulakis, Our Lady of Mercy: The Adventrures of an Icon. ZKK, ZEITSCHRIFT FUR KUNSTTECHNOLOGIE UND KONSERVIERUNG 16, HEFT 2 JAHRGANG 2002.
- [16] Sister Daniilia, Sophia Sotiropoulou, Dimitrios Bikiaris, Christos Salpistis, Georgios Karagiannis, Yannis Chrysoulakis, Beth. A. PRICE, Janice H. CARLSON , Panselinos' byzantine wall-paintings of the Protato church, Mount Athos, Greece - A technical examination, Journal of Cultural Heritage, ELSEVIER, Vol.1 – No.2 –April-June 2000.
- [17] Αδ. Δανιηλία, Σ. Σωτηροπούλου, Δ. Μπικιάρης, Χρ. Σαλπιστής, Γ. Καραγιάννης, Γ. Χρυσουλάκης, B.A. Price, J. H. Carlson. Οι τοιχογραφίες του Πανσέληνου στον Ι. Ναό του Πρωτάτου Αγίου Όρους: Φυσικοχημική ανάλυση. Μέρος πρώτο. Αρχαιολογία, 73, 91-96 (1999).
- [18] Αδ. Δανιηλία Σ. Σωτηροπούλου, Δ. Μπικιάρης, Χρ. Σαλπιστής, Γ. Καραγιάννης, Γ. Χρυσουλάκης, B. A. Price, J. H. Carlson, Οι τοιχογραφίες του Πανσελήνου στον Ι. Ναό του Πρωτάτου Αγίου Όρους: Φυσικοχημική ανάλυση. Αρχαιολογία, Α΄ μέρος: Τεύχος 73, σελ. 91-96, Δεκέμβριος 1999 και Β΄ μέρος: Τεύχος 74, σελ. 84-92, Μάρτιος 2000.

Proceedings of Conferences

- [1] Infrared reflectance of metallic objects coated with a class of varnishes or absorbing pigments, Amanatiadis, Apostolidis, G. Karagiannis, SPIE Security + Defence 2018, Berlin, Germany, 10-13 September 2018.
- [2] G. Karagiannis, G. Apostolidis, M. Stefanidou, Measuring the protective role of clay-based renders in adobe masonry using thermal imaging and ultrasonic velocity imaging, IEEE EEEIC2017, June 6th-9th 2017, Milan Italy.
- [3] G. Karagiannis G. Marchioro, G. Apostodolis, G. Karagiannis, M. Galeotti, C. Daffara, Surface and sub-surface layers characterization in artworks using conoscopic laser holography and acoustic microscopy, SPIE O3A, Munich, June 2017.
- [4] Alice Dal Fovo, Jana Striova, Marco Barucci, Raffaella Fontana, Chiara Grazia, Aldo Romani, Sotiris Psilodimitrakopoulos, Demetrios Anglos, Georges Filippidis, Magdalena Iwanicka, Piotr Targowski, George Karagiannis, Mohamed Oujja, Esther Carrasco, Mikel Sanz, Marta Castillejo,

- MICROSCOPY IMAGING FOR NON-DESTRUCTIVE ANALYSIS OF PAINTINGS, SPIE O3A, Munich, June 2017.
- [5] Georgios Karagiannis, " 3D "spectracoustic" system: a modular, tomographic, spectroscopic mapping imaging, non-invasive, diagnostic system for detection of small starting developing tumors like melanoma", Proc. SPIE 10064, Photons Plus Ultrasound: Imaging and Sensing 2017, 100645Z (April 24, 2017); doi:10.1117/12.2271498; <http://dx.doi.org/10.1117/12.2271498>.
- [6] Georgios Karagiannis, AN ULTRASONIC AND SPECTROSCOPIC MICROSCOPY LAB PERFORMING HIGH RESOLUTION QUANTITATIVE AND QUALITATIVE EVALUATION OF EPIDERMIC STRUCTURES *and not only*, *EΛEBIT*, 7th Panhellenic Conference of Biomedical Technology, 7th of April 2017, Αθήνα, Ελλάδα. 2017
- [7] Georgios Karagiannis, Scientific and Technical Head, Diagnosis Centre of the ORMYLIA Foundation, Innovative instruments and methods for integrated approaches to CH analysis and diagnostics), International Symposium on 'Cultural Heritage and Data: The Role of Research Infrastructures', S. Dillon Ripley Center, Smithsonian Institution (1100 Jefferson Drive SW, Washington DC 20560), December 5-6/2016.
- [8] Georgios Karagiannis, Scientific and Technical Head, Diagnosis Centre of the ORMYLIA Foundation (GR), Knowledge and innovation and technology transfer in IPERION CH, International Symposium on 'Cultural Heritage and Data: The Role of Research Infrastructures', Library of Congress, Madison Building (101 Independence Avenue SE, Washington, DC 20540), December 5-6/2016.
- [9] Γ. Καραγιάννης, Φωτίζοντας το παρελθόν – Δημιουργούμε νέα πολιτιστική και οικονομική κληρονομιά (απόθεμα) για το μέλλον, Βυζαντινός πολιτισμός ως εργαλείο οικονομικής ανάπτυξης, Σάββατο - 5 Νοεμβρίου 2016 – Μέγαρο Μουσικής Θεσσαλονίκης.
- [10] G. Karagiannis, I. Grivas, C. Bekiari, G. Apostolidis, G. Papadopoulos, Evaluating the course of an Alzheimer's disease model in the rat brain with high frequency ultrasound, SAN 2016 conference, 6-9/10/2016, Corfu, Greece.
- [11] Relieving robots from their burdens: The Cloud Agent concept, Aristeidis Thallas, Konstantinos Panayiotou, Emmanouil Tsardoulis, Andreas Symeonidis and Pericles A Mitkas, Georgios Karagiannis, 5th IEEE International Conference on Cloud Networking, 3-5/10/2016, Pisa, Italy.
- [12] Comparative study for water protection of ancient rammed earth flooring mortars, Katia Matziaris, Maria Stefanidou, George Karagiannis, HMC2016, Santorini, 10-12 October 2016.
- [13] Georgios Karagiannis, Maria Stefanidou, Georgios Apostolidis, Katia Matziaris, Application of acoustic microscopy technique for the evaluation of the optimal application of the rendering to masonry, HMC2016, 10-12 October 2016, Santorini, 2016.
- [14] G. Karagiannis, G. Apostolidis, S. Sotiropoulou, K. Fragoulis, D. Minasidis, A. Mentzos, Application of a non-destructive testing mobile lab for in situ analysis of archaeological objects from the "Late Antique house" in Dion, Greece: results and data interpretations, ISA2016, May 2016 Kalamata, Greece.
- [15] G. Karagiannis, Non-destructive endoscopy of cultural heritage objects of various kinds and materials, ISA2016, May 2016 Kalamata, Greece.
- [16] G. Karagiannis, An ultrasonic and spectroscopic microscopy lab performing high resolution quantitative and qualitative evaluation of epidermic structures (scanning cases from melanoma, skin and nails), COSM'INNOV 2016, 24-25 May 2016, Orleans, France.

- [17] G. Karagiannis, 3D spectroscopic mapping tomography applied to art objects diagnosis, InART, International conference on innovation in art research and technology, Ghent Belgium, 22-25th March 2016.
- [18] G. Karagiannis, High resolution spectroscopic mapping imaging applied in situ to multilayer structures for stratigraphic identification of painted art objects, SPIE Photonics Europe 2016, SQUARE Brussels Meeting Centre, Brussels, Belgium 4 - 7 April 2016.
- [19] G. Karagiannis, G. Apostolidis, Investigation of stratigraphic mapping in paintings using micro-Raman spectroscopy, SPIE Photonics Europe 2016, SQUARE Brussels Meeting Centre, Brussels, Belgium 4 - 7 April 2016.
- [20] Georgios Karagiannis; Georgios Apostolidis and Panagiotis Georgoulas "Numerical and experimental analysis of high frequency acoustic microscopy and infrared reflectance system for early detection of melanoma ", Proc. SPIE 9708, Photons Plus Ultrasound: Imaging and Sensing 2016, 97084N (March 15, 2016); doi:10.1117/12.2213464; <http://dx.doi.org/10.1117/12.2213464>
- [21] G. Karagiannis, 3D spectroscopic mapping imaging for early detection of melanoma, 4th Panhellenic conference of tumor imaging, 17th -19th December 2015, Teloglion Foundation, APTh, Thessaloniki.
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- [66] Σ. Σωτηροπούλου, Α. Δανιηλία, Κ. Ανδρικόπουλος, Γ. Καραγιάννης και Γ. Χρυσουλάκης, Η Ιδιοπροσωπία του Νικολάου Γύζη. Η πρώτη Διαγνωστική προσέγγιση της ζωγραφικής του. 4ο Συμπόσιο Αρχαιομετρίας, Αθήνα 28-31 2003.
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Invited lectures - Presentations

- [1] Georgios Karagiannis, Scientific and Technical Head, Diagnosis Centre of the ORMYLIA Foundation, Innovative instruments and methods for integrated approaches to CH analysis and diagnostics), International Symposium on 'Cultural Heritage and Data: The Role of Research Infrastructures', December, 5-6, S. Dillon Ripley Center, Smithsonian Institution (1100 Jefferson Drive SW, Washington DC 20560).
- [2] Georgios Karagiannis, Scientific and Technical Head, Diagnosis Centre of the ORMYLIA Foundation (GR), Knowledge and innovation and technology transfer in IPERION CH, International Symposium on 'Cultural Heritage and Data: The Role of Research Infrastructures',

- December, 5-6, Library of Congress, Madison Building (101 Independence Avenue SE, Washington, DC 20540).
- [3] G. Karagiannis, Non-invasive detection of melanoma with the combined use of acoustic microscopy from 50 up to 175MHz and infrared reflectance spectroscopy and spectroscopic mapping imaging in the area of 6-14 μ m, BiMI summer school, University of Crete, 27-31 July 2015.
 - [4] G. Karagiannis, Development of a non-invasive system for the early detection of melanoma with the combined use of acoustic microscopy, infrared diffuse reflectance and Raman spectroscopy, Medical School, University of Thessaly, Greece, Fraunhofer Institute, Cognitive Computing & Medical Imaging, Darmstadt Germany, "ORMYLIA" Foundation, Diagnostic Centre, Ormylia, Greece, University of Pennsylvania (U-PENN), February 12th, 2015.
 - [5] G. Karagiannis, Presentation in real time and in situ of the operation of the mobile Lab of "ORMYLIA" Foundation and the project Surgical Excavation in the excavation of DION during MARE.14, Materials and Techniques for the Restoration of Monuments, 6-20 July 2014.
 - [6] G. Karagiannis, Non-invasive system for the early detection of melanoma with the combined use of acoustic microscopy from 50 up to 175MHz and diffuse reflectance spectroscopy from 0.4 μ m up to 5 μ m, Technical University of Aachen, 16th of December 2013.
 - [7] G. Karagiannis, from micrometre to nanometre applications from various "industrial" applications, Nanotechnology NN13, July 2013, Invited Speech.
 - [8] G. Karagiannis, Key Note Lecture, "Non-destructive identification of the "DNA" of art objects using remote sensing and tomographic techniques" A bottom up experience useful to special industry non-destructive inspections and vice versa, Key Note Lecture, 5th International Conference on NDT of HSNT 20-22 May, 2013 Athens – Greece.
 - [9] G. Karagiannis, Combination of electromagnetic and mechanical waves based radiation techniques for the high resolution and fidelity mapping imaging, IESL FORTH, June 22, 2012
 - [10] G. Karagiannis, Design, non-destructive testing, in meters to nano meters scale, analytical micro-nano analytical and signal processing, applied to Biomedical Eng., Cultural Heritage Documentation- conservation science and Industrial applications, a multidisciplinary approach, BEST Network, Aristotle University of Thessaloniki, April 2012
 - [11] G. Karagiannis, "ORMYLIA" Foundation, Art Diagnosis Centre Infrastructure supporting Biomedical Engineering applications and research actions-first steps, Breast Care Workshop 2011 of the Susan G. Komen "for the Cure", Ormylia, Greece, September 2011.
 - [12] G. Karagiannis, "ORMYLIA" Foundation, Art Diagnosis Centre, Non destructive testing and signal processing techniques applied to conservation science, The Fraunhofer Institute for Biomedical Engineering (IBMT) (http://www.ibmt.fraunhofer.de/fhg/ibmt_en/biomedical_engineering/ultrasound/index.jsp), 21st of December 2010.
 - [13] G. Karagiannis, Non-destructive identification of the "DNA" of art objects using remote sensing and tomographic techniques", Invited lecture to the Institute of informatics and telematics, CERTH, 21st of April 2010.
 - [14] G. Karagiannis, Non destructive identification of art objects using multispectral mapping images and acoustic microscopy, 9th EMAS workshop : Electron Probe Microanalysis of Materials Today - Practical Aspects, with emphasis on Cultural Heritage application, Amsterdam, April 2010.

- [15] G. Karagiannis, Non-destructive identification of the “DNA” of art objects using remote sensing and tomographic techniques”, Invited key note speaker, AUTHENTICO workshop, Bibliotheca Alexandrina, Alexandria, Egypt, November 2009.
- [16] G. Karagiannis, Non destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy, TechnArt 2009, Non-destructive and Microanalytical Techniques in Art and Cultural Heritage, Athens, 27 - 30 April 2009, <http://www.inp.demokritos.gr/~technart2009/>.
- [17] G. Karagiannis, Towards “cultural” intelligence: A new context based bottom up approach for documentation and dissemination of Cultural Heritage, Investing in Cultural Heritage, Bibliotheca Alexandrina, Alexandria, Egypt, December 2008.
- [18] G. Karagiannis, NDT and signal processing techniques in the field of cultural heritage objects documentation - University of Balamand, Lebanon, April 7th, 2008 (<http://www.balamand.edu.lb/english/Research.asp?id=8931&fid=266&PageName=InfrArtSonic%20Project%20-20Non%20Invasive%20Method%20for%20Studying%20Art>).
- [19] G. Karagiannis, NDT and signal processing techniques in the field of cultural heritage objects documentation - The InfrArtSonic project, University of Southampton, 2007, 2nd of November 2007, (http://www.iam.ecs.soton.ac.uk/seminars/?action=viewpresentation&presentation_id=199)
- [20] Γ. Καραγιάννης, Χ. Σαλπιστής, Γ. Σεργιάδης, Ι. Χρυσουλάκης, Διάλεξη στο ΕΚΕΤΑ με θέμα: Ανάπτυξη Μεθοδολογίας μη Καταστρεπτικού Διαγνωστικού Ελέγχου των Έργων Ζωγραφικής Τέχνης, μέσω Υπέρυθρων Πολυφασματικών Λήψεων και Υπερήχων Εξαιρετικά Μικρού Μήκους Κύματος, Εθνικό Κέντρο Έρευνας και Τεχνολογικής Ανάπτυξης, 6 Ιουνίου 2006.
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Important technical and scientific reports

- [1] InfrArtSonic project Deliverable 6.1: “Evaluation of the InfrArtSonic system”, G. Karagiannis, 30th of June 2009.
- [2] InfrArtSonic project Deliverable 4.2: “Description of the UV/VIS/nIR/mIR module operation”, G. Karagiannis, C. Salpistis, D. Alexiadis, A. Damtsios, G. Sergiadis, T. Vasiliadis, I. Nerantzis, 31st of December 2007.
- [3] InfrArtSonic project Deliverable 4.1: “Description of the acoustic microscope module operation”, G. Karagiannis, C. Salpistis, D. Alexiadis, A. Damtsios, G. Sergiadis, T. Vasiliadis, I. Nerantzis, 31st of December 2007.
- [4] InfrArtSonic project Deliverable 1.2: “System specifications”, G. Karagiannis, G. Sergiadis, C. Salpistis, T. Vasiliadis, E. Minopoulou, S. Wesarg, June 2006.
- [5] InfrArtSonic project Deliverable 3.1: “Description of the simulation of the acoustic microscope module operation”, G. Karagiannis, A. Damtsios, D. Alexiadis, C. Salpistis, G. Sergiadis, 8th of January 2007.

- [6] InfrArtSonic project Deliverable 3.2: "Description of the simulation of the UV/VIS/nIR/mIR module operation", G. Karagiannis, D. Alexiadis, A. Damtsios, G. Sergiadis, E. Minopoulou, Sr Daniilia, 31st of December 2006.
- [7] Μελέτη της ανάπτυξης συστήματος υπέρυθρης ανακλαστογραφίας μεγάλης ανιχνευτικής ικανότητας και υψηλής ευκρίνειας μέσω ευαίσθητων υπέρυθρων ανιχνευτών CCD, PtSi, και συνεχούς λήψης της υπέρυθρης εικόνας από 1µm μέχρι 6µm. Τελική έκθεση ολοκλήρωσης έργου, Επιχειρησιακό πρόγραμμα έρευνας Και τεχνολογίας ΕΠΕΤ II, Γ. Καραγιάννης, Χ. Σαλπιστής, Γ. Χρυσουλάκης, 1999.
- [8] Τεχνικοοικονομική έκθεση τελειοποίησης του «Συστήματος Βάσης Δεδομένων και Τεκμηρίωσης Αντικειμένων Πολιτισμού «ArtBase», στα πλαίσια του έργου 02 ΠΡΑΞΕ 37, Γ. Καραγιάννης, Δ. Μαμαγκινίδης, 2004.
- [9] Τεχνική έκθεση τελειοποίησης του «Συστήματος ανακλαστοσκόπησης υψηλής ευκρίνειας και μεγάλης ανιχνευτικής ικανότητας συνεχώς μεταβαλλόμενου μήκους κύματος από 200nm μέχρι 6000 nm» , στα πλαίσια του έργου 02 ΠΡΑΞΕ 36, Γ. Καραγιάννης, Χ. Σαλπιστής, Γ. Χρυσουλάκης, 2004.

Issued and published business plans

- a. Business and exploitation plan for the documentation system for art objects «ArtBase», 2003.
- b. Business and exploitation plan for the «reflectoscopy high resolution and sensitivity system with tuneable wavelength from 200nm up to 5000 nm», 2003.
- c. Business and exploitation plan for the InfrArtSonic system (www.infrartsonic.org), 2008.

Organisation of international workshops and conferences

He has organised several international events:

- [1] Organized and co-funded by the Hellenic Russian conference entitled "Byzantium and Russia: Icons, Art and Technology" in Gallery TRETAKOV in Moscow. This conference was first presented approach to art and technology with intellectual movements, 10/03/2017, (<http://www.gsrt.gr/News/Files/New71462/greek%20russian%20final%20compressed.pdf>),(http://www.gsrt.gr/central.aspx?slId=124I447I1128I646I509239&olID=777&neID=589&neTa=3_71462&nclD=0&neHC=0&tbid=0&lrID=2&oldUIID=aI777I0I119I428I1089I0I3&actionID=load).
- [2] Co-organized the international conference 12o IRUG 2016 in "ORMYLIA" Foundation, Infrared & Raman users Group (<http://www.irug12-ormylia.gr/>).
- [3] "International Workshop with Subject: "Information processing and knowledge management applications in cultural heritage and conservation science supported by 05 AKMΩN 83 and INCO-CT-2005-015338 projects, «ORMYLIA» Foundation, 13th of June 2008,
- [4] Special session entitled «ICT - Artworks, Documents & Archaeology» in the frame of IEEE ICTTA '08 : International Conference on Information & Communication Technologies from theory to applications, April 7 - 11, 2008, Umayyad Palace, Damascus, Syria.
- [5] International Workshop entitled: «NOVEL TECHNOLOGIES FOR DIGITAL PRESERVATION, INFORMATION PROCESSING AND ACCESS TO CULTURAL HERITAGE COLLECTIONS» in the frame of LABSTECH project "ORMYLIA" Art Diagnosis Centre, 24th of May 2004.

- [6] International Workshop entitled: «The contribution of Information and Communication Technologies to the advanced research of European religious and cultural heritage» “ORMYLIA” Art Diagnosis Centre, 24th October 1998.

Teaching experience

From 1998 till 2017 he teaches to the Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument:

1998-99 :Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Databases and image processing.

2000-01 :Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument : Databases and Colorimetry.

2002-03: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument : Infrared reflectography

2004-05: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument : Documentation of art objects through the use of multispectral imaging and databases

2006-07: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument :Documentation of art objects through the use of multispectral imaging and databases

2008-09: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non-destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2010-11: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2012-13: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non-destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2012-13: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non-destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2014-15: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non-destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2016-17: Intersectional Programme of Postgraduate Studies on Protection, Conservation and Restoration of Cultural Monument: Artobjects documentation systems and semantics, “Non-destructive identification of art objects using multispectral imaging and spectra combined with acoustic microscopy”

2015-17: Teaching in Master CULTECH curriculum entitled "Non-destructive identification of works of art using multispectral shots and tomographic methods" (<http://culttech.uop.gr/>).

✚ He has been supervisor for more than 10 diploma thesis in collaboration with Aristotle University of Thessaloniki and other Universities.

✚ He was an instructor of informatics in the Centre of Professional Education that belongs to the sacred Convent of the Annunciation in Ormylia, Chalkidiki, Greece.

MEDIA

[1] Documentary to the French-German TV "ARTE" related to the non-destructive evaluation of art objects - "The hidden secrets of the Vintage Masters", On November 13th 2009 ARTE showed the film "Alte Meister – Neuer Glanz / The hidden secrets of the Vintage Masters", Germany, France, Italy, 2009,ZDF
Directors: Annette Heinrich, Christian Hestermann.

[2] Reuters 17/10/2008: Μη καταστρεπτικός έλεγχος των φανωμάτων του Ερεχθείου της Ακρόπολης των Αθηνών (<http://www.reuters.com/article/2008/10/17/us-greece-acropolis-idUSTRE49G45E20081017>).

[3] Interview to the third national channel of Greek TV (ET 3) related to the technological efficiency of the Art Diagnostic Centre of Ormylia Foundation.

[4] Interview to Kathimerini newspaper, 30/08/2009 presenting the mobile Lab of Ormylia Foundation developed under the projects ARTECH και InfrArtSonic.

[5] Fileleftheros newspaper of Cyprus 14/03/2009.

Seminars attended

[1] Installation and Training of the use of the dual raman source system of BWTEK (27/07/2018) from BWTEK experts in the labs of "ORMYLIA" Foundation.

[2] Training /demo use of the Raman Bravo system of Bruker (12/07/2017) from Bruker experts in the labs of "ORMYLIA" Foundation

[3] Seminar and training on ISO 17025 from the National Institute of Metrology, 24/10/2017.

[4] Training /demo use of the equipment of Phase One from Photovision (04/09/2017) Photovision in "ORMYLIA" Foundation.

[5] Training: OPUS Marco, VB-Script language, and VisualStudio OEMDLL (15-17/11/2016) from Bruker experts in the laboratories of Bruker in Ettlingen, Germany

[6] Training in software development of dynamic link libraries for the spectrophotometers of BRUKER OPTICS in the infrared region of the e/m spectrum using MS visual studio 2015, August 2016.

[7] Training in energy design, construction and inspection of buildings for obtaining the license of the Energy Inspector, Certified Training Centre , 2013.

[8] Energy efficiency of the study, construction and inspection of buildings, Technical Chamber of Greece (TEE), January 2011.

[9] Seminar and training on ISO 17025 from the National Institute of Metrology, June 2010.

- [10] Seminar on FT-NIR & TD-NMR Spectroscopy Modern Spectroscopic Techniques for the Quality Control in the Food & Feed Industry».
 - [11] Concrete and steel technology, Technical Chamber of Greece, 5th of May 2007.
 - [12] Oracle10g: Java Programming (40 ώρες στην New Horizons – πιστοποιημένο από την ORACLE)
 - [13] Oracle10g: Access the Database with Java and JDBC (16 ώρες στην New Horizons – πιστοποιημένο από την ORACLE)
 - [14] Oracle10g: Build J2EE Applications (36 ώρες στην New Horizons – πιστοποιημένο από την ORACLE)
 - [15] Participation to the Telematic Education Training project, with subjects:
 - a. WWW as a Learning Supporting Tool (15-17 Σεπτ. 1997, 10ώρες)
 - b. VSAT Satellites Network (10ώρες)
 - c. Regulation and Policy of Telecommunications products (10 ώρες)
 - d. Advanced Biomedical Signal Processing (10 ώρες)
- The lessons were provided by the Hub station in Madrid and were simultaneously attended by students in 8 different European universities. Duration : 1997

Other knowledge

Operational systems / software tools

- [1] Programming Languages: Pascal, Fortran, MS Visual Basic, MS Visual C++, SQL
- [2] Development of database systems using the DBMS of ORACLE 9.2i-10g and OMNIS, OMNIS Studio 4 και της SQL.
- [3] Oracle10g: Java Programming, Oracle10g: Access the Database with Java and JDBC, Oracle10g: Build J2EE Applications.
- [4] Knowledge of CAD S/W; AUTOCAD, Protel Schemantic, Visio, SPICE
- [5] Programming under MATLAB.
- [6] UNIX, DOS, Windows NT/95/98/2000/XP, MACOS.

Other

- [1] He is chess referee

Languages

English, fluent, French fair