

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

1. ΕΠΩΝΥΜΟ : **ΟΡΦΑΝΟΥΔΑΚΗΣ**
2. ΟΝΟΜΑ : **ΝΙΚΟΛΑΟΣ**
ΔΙΕΥΘΥΝΣΗ : ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ, ΠΑΡΑΡΤΗΜΑ ΕΥΡΙΠΟΥ (Mech. Eng. Dept.) 34400 ΨΑΧΝΑ - ΕΥΒΟΙΑ, GREECE (ΕΡΓΑΣΙΑ)
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3. Ημ. Γεννήσεως : 10 Απριλίου 1962
4. ΕΘΝΙΚΟΤΗΤΑ : Greek
5. ΟΙΚΟΓΕΝΕΙΑΚΗ ΚΑΤΑΣΤΑΣΗ : *ΕΓΓΑΜΟΣ, 2 τέκνα*
6. ΕΚΠΑΙΔΕΥΣΗ :

<i>ΙΔΡΥΜΑ :</i>	ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
<i>ΗΜΕΡΟΜΗΝΙΕΣ:</i> <i>Από έως έτος / μήνας</i>	Σεπτέμβριος 1980 - Ιούνιος 1986
<i>ΔΙΠΛΩΜΑ</i>	Μηχανολόγου Μηχανικού (ΒΑΘΜΟΣ: 7.5)

<i>ΙΔΡΥΜΑ :</i>	Imperial College, University of London, United Kingdom
<i>ΗΜΕΡΟΜΗΝΙΕΣ:</i> <i>Από έως έτος / μήνας</i>	Αύγουστος 1988 - Απρίλιος 1994
<i>ΔΙΠΛΩΜΑ</i>	Διδακτορικό σε καύση και Μηχανική Ρευστών

<i>ΙΔΡΥΜΑ :</i>	International Welding Institute
<i>ΗΜΕΡΟΜΗΝΙΕΣ:</i> <i>Από έως έτος / μήνας</i>	Σεπτέμβριος 2018 - Ιούλιος 2019
<i>ΔΙΠΛΩΜΑ</i>	Welding Engineer

7. Language skills : (Mark 1 to 5 for competence, where 5 is the highest)

<i>Language</i>	<i>Passive</i>	<i>Spoken</i>	<i>Written</i>
Greek	5	5	5
English	5	5	5
German	5	5	5

8. Membership of

Professional Bodies:

- Member of the "Verein Deutscher Ingenieure-Gesellschaft Energietechnik (VDI-GET)"
 - Member of the Technical Chamber of Greece (TEE)
- Member of the Association of the Greek Electro-Mechanical Engineers
 - Founding member of the Greek Section of the Combustion Institute and member of Board of Directors.
 - Member of the International Combustion Institute
 - Member of COGEN - Hellas (Technical Chamber for Cogeneration of Heat & Power)
 - Μέλος της Ελληνικής εταιρείας Μη καταστροφικών Ελέγχων ΕΛΕΜΚΕ

9. Other skills (e.g. computer literacy, etc.) :

Experience on monitoring and evaluation of technical projects, use of common microcomputer software packages

10. Present position : *Professor* in National and Kapodistrian University of Athens, Head of "Laboratory for Technical Study, Design, Supervision, Efficiency Evaluation of Thermal and Environmental Installations" (former: Steam Boilers - Turbines and Thermal Power Laboratory).

11. Years within the company: *24 years*

12. Key :
 - More than 37 years of experience on power production, emissions and environmental issues and on coal utilization in steam boilers & related topics.
 - *TueV CERT Lead Auditor* (for ISO9000 & Environmental Management)

Systems) -Environmental Auditor Course (ISO14000 oriented) by Assessment, Certification and Environment Ltd.

Technical Lead Assessor of the National Accreditation System of Greece (NAS) for Assessing Inspection & Certification Bodies & Laboratories (ESYD)

Extensive experience in industrial energy efficiency and energy audits. He has implemented a number of energy audits at the sectors of cement, food, metals and has particular experience in Combined Heat & Power (CHP) and District Heating systems (see table at the end about acceptance tests of District Heating Systems in terms of energy efficiency as well as emissions of boilers -Kozani, Ptolemais, Serres). Energy audits in Serbia in all type of industries (cement, tyres, paper etc.)

Technical Evaluator in the Greek Ministry of Industry for proposals in Energy Saving, CHP, Alternative Sources Energy

Design, engineering and measurements in industrial heat process systems "Design evaluation of coal burners". Project financed by the Commission of the European Communities (contract number C.E.C. / JOUF-0040-C)

and Experience relevant to European Programms:

- Scientific advisor of the Centre for Solid Fuels Technology and Applications in Greece (CSFTA) coordinated projects for DGXVII undertaken by CSFTA.
- *Design and evaluation* of a new low emission burner using fuels of low calorific value and *waste fuels* together with coal as main fuel. Project funded by General Secretariat of Ministry of Development - Greece. Collaborator of Institute for Technology and Research - Crete, Greece
- Project within the BRITE frame of programms with the title «Optimization of perlite process for utilization in new building materials, BE7087. Scientific collaborator of NTUA.
- Investigation of the pressure cone and temperature field of the Fagot A/T missile system. Technical expert collaborator of NTUA.

13. Specific experience (in non-EU member countries)

Country	Date : from (months/year) to (months/year)	Name and brief description of the project
Romania	Sep. 01 to May 02	Environmental Audits in Steel Industry in Hunedoara – Romania. The project was related to measurements and evaluation of contamination of ground and rivers as well as emissions to atmosphere, due to the operation of Siderurgica - Steel Industry in Hunedoara. Involment in the steel production optimization in relation to quality and environmental matters. Steel Structures supervision
China	Summer 2001	Training of power plant engineers on combustion optimisation & emission reduction methods. The courses included new methods for power generation as far as efficiency is concerned (Combined Cycle, Intergtated Coal Gasification, etc.) and emission reduction techniques with the use of Best Available Techniques (BATs, CO2 reduction etc.).
Serbia	November 2003- March 2004	Training of industrial plant engineers on combustion optimisation & emission reduction methods as well as measuring campaign for the evaluation of efficiency and the environmental impact in various industries that included cement industry (TITAN), Vulcan industry (Tigar), Beer Industry (JAGODINSKA PIVARA), Automotive industry (Zastava), Paper & pulp Industry (Milan Stepanović Matroz), Chemical Industry (METHANOL & ACETIC ACID COMPLEX). Environmental Audits in industry and buildings.

14. Professional Experience Record:

Dates from (year) to (year):	06/1982 - 07/1982 & 08/1982 - 09/1982 & 06/1986 - 09/1986
Location:	Heraklion-Crete / Egion/ Greece & Kozani Greece
Company:	• Public Power Corporation (PPC). Steam Electric Power Station of Linoperamata (Crete) & SES

<p><i>Position:</i></p> <p><i>Description:</i></p>	<p><i>Aghios Dimitrios, SES Kardia, SES Ptolemais and SES Amynteon (Northern Greece)</i></p> <ul style="list-style-type: none"> Hellenic Military Industry <p>trainee Engineer</p> <ul style="list-style-type: none"> <i>Work and familiarization in Combustion Systems, steam generators, steam turbines, lignite feeding and lignite mills, electrostatic precipitators. Participation in acceptance test measurements of PPC power plant (Unit III of SES Ag. Dimitrios).</i> Familiarisation with construction-machining methods and design of new components
<p><i>Dates from (year) to (year):</i></p> <p><i>Location:</i></p> <p><i>Company:</i></p> <p><i>Position:</i></p> <p><i>Description:</i></p>	<p>10/1986 - 12/1986 & 1/1987 - 09/1988 & 09/1988 - 05/1994</p> <p>London and Athens</p> <p>National Technical University of Athens and Imperial College</p> <p>Freelance Mechanical Engineer, responsible for EEC Programms</p> <ul style="list-style-type: none"> Design and commissioning of various test facilities for CE marking (boilers) and other studies for steam boilers and relevant systems. More than 35 years involvement in measurements of boilers of various sizes (10kW to MWth) and relevant evaluation. <i>Design and supervision for the construction of measuring system for coal combustion measurements</i> <i>Detailed design of the coal burners & fluid mechanics and combustion measurements (e.g. of pollutants etc.). The measurements were performed with a specially developed optical system for the simultaneous measurements of size and velocity of burning coal. The system was designed and supervised during its construction. In addition, special software in machine language for PDP-11 (control of counter and transient recorder via DMA and IEEE ports) and RATFOR for data acquisition and process.</i>
<p><i>Dates from (year) to (year):</i></p> <p><i>Location:</i></p> <p><i>Company:</i></p> <p><i>Position:</i></p> <p><i>Description:</i></p>	<p>05/1994 - 12/1995</p> <p>Kozani and Athens Greece</p> <p>Hellenic Army and Research Centre of Hellenic Army</p> <p>Director of the engineering bureaux of 1st Greek Army Corps. Research Engineer at Research Centre of Hellenic Army.</p> <p>Head of Metallic Constructions Department that performed constructions for all the 1st Hellenic Army Corps. Involvement on special projects providing technical consultancy such as engineering support for the operation of multiple launchers, design and commissioning of various power plants installations (of various power output), design and test of night vision cameras, cryptographic apparatuses etc. for the needs of the Greek Army.</p>
<p><i>Dates from (year) to (year):</i></p> <p><i>Location:</i></p> <p><i>Company:</i></p> <p><i>Position:</i></p> <p><i>Description:</i></p>	<p>02/1996 - 07/1999</p> <p>Athens</p> <p>TÜV Hellas S.A.</p> <ul style="list-style-type: none"> Director of Energy and Environment Section TÜV CERT Lead Auditor for Quality Systems & Environmental Management Systems. <i>Director of the CE Section of TÜV Hellas S.A., for hot water boilers and gas apparatuses. As head of the CE marking - approval section for hot water boilers & gas apparatuses (according to relevant EU Directives: EC 92/42 & EC 90/396), conducted Inspections of product (in collaboration with accredited laboratories) and System Audits, to award the customers with CE certification.</i> <i>Director of the school for vehicle drivers used for the transport of dangerous substances (ADR). Special Training Course for Inspectors on ADR matters in Unna Germany 1995 (TUEV Akademie).</i> <i>Authorised ADR Inspector of the Greek Ministry of Transport and Communications (YME).</i> <p>Project Manager for all the projects undertaken within the company in the Energy and Environment area. Acceptance tests of various power (e.g. SES Ag. Dimitrios V, SES Lavrio 4 etc.) and industrial plants in terms of efficiency and environmental impact. Detailed studies for district heating systems and other thermal plants. Isokinetic measurements (VDI2066) for dust emissions at various plants. (List of projects is at the end eg. PPC power plants, oil extraction unit in Heraklion -Crete).</p>
<p><i>Dates from (year) to (year):</i></p> <p><i>Location:</i></p>	<p>01/1987 –</p> <p>Athens</p>

<p><i>Company:</i></p> <p><i>Position:</i></p> <p><i>Description:</i></p>	<p style="text-align: center;">Freelance Mechanical Engineer</p> <p>Freelance Mechanical Engineer</p> <ul style="list-style-type: none"> • Special Consultant of TUEV Oesterreich Hellas, on Energy and Environmental matters. • <i>Design and evaluation</i> of a new low emission burner using fuels of low calorific value and <i>waste fuels</i> together with coal as main fuel. The project includes design of auxiliary equipment (fuel feeding system, exhaust gas system including the precipitators as well as all the needed mechanical components for the <i>fluid mechanics</i> and <i>combustion</i> measurements). Project funded by General Secretariat of Ministry of Development - Greece. Collaborator of Institute for Technology and Research - Crete, Greece. Application of the design in cement industry. • <i>Design, commissioning and evaluation</i> of a small (40kW thermal input) experimental furnace for perlite. The project included the design of the low emission swirl stabilised burner, automation - control system of the furnace and the perlite feeding apparatus. The project was within the BRITE frame of programmes with the title «Optimization of perlite process for utilization in new building materials», BE7087. Scientific collaborator of NTUA. • Design and construction supervision of metallic constructions for crane bridges manufacturers (eg. 2π Ltd; this company has workshop in Inofita). Preparation of welding procedures for all the metallic constructions of the company as well as construction supervision and assembly of all types of crane bridges. • Special project for the <i>measurement</i> and the evaluation of the thermal and pressure cone formed by a missile. Design of the measurement and triggering system. (Hellenic Army). • <i>Teaching</i> in special courses on steam boilers and steam turbines, coal combustion and applications – improvements of efficiency and emissions for large coal and lignite fired power plants. The courses are organized by Public Power Corporation (PPC) for the engineers working in power stations. • Study for the emissions from power plants with total thermal output over 50MW_{th}. (Ministry of Environment and Public Works). (for application of relevant directive EC 96/61 IPPC) • Professor at <i>Hellenic Air Force Academy</i> on Combustion, Boilers, Heating, Cooling and Air Conditioning. • Preliminary study for a waste (RDF) combustion power plant in greater Athens area (30MW_{el}). • Design and commissioning of several type of electro-mechanical engineering projects for industry and buildings. Co-generation & waste (RDF) combustion power plant studies. • <i>Design and evaluation</i> of a new low emission burner using fuels of low calorific value and <i>waste fuels</i> together with coal as main fuel for power and process industry. • <i>Teaching</i> in special courses on welding procedures and hoisting equipment • <i>Teaching</i> in special courses on combustion improvements of efficiency and emissions for large coal and lignite fired power plants. Energy conservation. Measurements techniques for Emissions and Energy studies. The courses are organized by the Greek Institute of Chemical Engineers. • Special technical evaluator of the <i>Greek Ministry of Development</i> and for the National Energy Program. • <i>Acceptance tests for power plants conventional (SES Aghios Dimitrios V) and combined cycle (SES Lavrio IV, SES Komotini I, Power Plant Atherinolakkos, Kossovo B).</i> • Large Experience in Boiler Inspection (as TUEV Inspector and then as ESYD Assessor during evaluation of inspection bodies), specific work on optical inspection of welds in boilers etc. • <i>Preliminary design of lignite Power Plant (2X280MW_{el}) in Congo. The study included the High Voltage (400kV) Line as well as the mines exploration design.</i> • Technical Lead Assessor of the National Accreditation System of Greece (NAS) for Assessing Inspection, Certification Bodies & Laboratories (ESYD). The subjects covered are all kind of Inspection (ISO17020) [including Vehicle Technical Inspection Centres -KTEO] Management Systems (ISO17021 for ISO9001, ISO14001, EMAS, ISO50001, ISO39001, ISO18001 etc), Personnel Certification (ISO17024)& Laboratories (ISO17025). • Main subcontractor of Atkins- Exergia for the due diligence of the power Plants in Greece prior the first privatization of PPC. Special involvement in all the lignite fired power plants. • Power Plant Renovation Evaluation, as subcontractor of EBRD-LDK. Pavlodar Power Plant 400MW_{el} + 400 MW_{th}, KAZAKHSTAN. • Environmental -Due diligence Audits in Steel Industry in Hunedoara - Romania • ADR special Inspector licencee • Special Greek State licensee for the detailed design of public works in the area of Mechanical and Electrical Engineering and Power Generation (highest degree – large scale installations).
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- Training courses on steam boilers, emission reduction techniques, optimal design of combustion equipment, energy efficiency, energy management in industry and buildings for the Technical University of Chalkis.
- *Teaching* in special courses, organized by Public Power Corporation (PPC) for power plant engineers, on combustion, improvement of efficiency and emissions for large coal and lignite fired power plants.
- Energy conservation. Measurements techniques for Emissions and Energy studies. Courses in industrial sector, organized by Institute of Chemical Engineers
- Energy studies for District Heating Systems in Amynteo, Kozani, Florina. Acceptance tests for 2X27.5 MWth + 1X 24.5MWth for Boilers in Kozani and Ptolemais District Heating Systems as well as Megalopolis DH System's boiler.
- Environmental Audits in PPC Power Stations - Greece
- Measurements in Power Plants & Training Courses on Clean Coal and Reduction Emissions for Chinese Power Plant Engineers
- Preliminary Study of District Heating of Florina
- Study for the RAE Bid & for the New Power Plant for Rhodes 150MWel
- Efficiency Measurements (Boiler, Turbine, Generator, Condenser, Cooling Tower etc.) & Preliminary Design for DESOx of SES Magalopolis 300MWe. Dust load measurements according to VDI2066.
- Measurements in Power Plants & Training Courses on Energy Audits in Serbia
- Efficiency and emission measurements for acceptance tests of SES Agios Dimitrios 3 and 5, SES Komotini (Combined cycle), SES Lavrio 4,5 (Combined cycle), SES Atherinolakko (IC Engines).
- Efficiency and emission measurements for Preliminary Design of DeNOx measures
- Technical Due Diligence for Pavlodar - Energo Plant investment project consisting of the extensive upgrade of the CHP-3.
- Boilers' Efficiency and emission measurements in District Heating System of Serres (Combined Heat and Power) and individual boilers from 20kW to 600kW in town of Serres
- *Efficiency Measurements (Boiler, Turbine, Generator, Condenser, Cooling Tower etc.) & Preliminary Design for DESOx of SES Kosovo B 1 & 2 (2X300MWe). Dust load measurements according to VDI2066.*

- 15. Others:** Over 400 Audits in Quality Assurance Systems and several Environmental Audits, in Industry and other Companies, as TÜV CERT Auditor.
- 16. NDT:** NDT Level II in PT, MT, UT, RI (ISO 9712). International Welding Engineer