

curriculum vitae

Fernando Carvalho Rodrigues



Areas of Expertise: Information Theory, Optics, Optoelectronics and Aerospace

Education and Training:

1995 - Agregado (German Habilitation) from the Instituto Superior Técnico (Technical University of Lisbon).
1995 - Doctor Honoris Causa from the Universidade da Beira Interior.
1974 - Ph. D. in Electrotechnical Engineering from the University of Liverpool.
1969 - Licenciado (M. Sc.) in Physics from the University of Lisbon.
1958/64 - Liceu Nacional de Gil Vicente (High-School - grades: 17 out of 20) where he was attributed the National Prize.

Academic Career:

2003 - Scientific Coordinator of Master Degree in Technology Information and Security of University Independente.
2000 - Scientific Coordinator of Technology Superior School Design of IADE
1996 - Pro-Rector for industrial research at the University Independente.
1995 - Professor and Director of the Faculty of Engineering Science of the University Independente (UnI).
1985-1996 Professor at the Instituto Superior Técnico (Technical University of Lisbon).
1980-1987 Director of the basic training course in Ophthalmic Optics for the National Opticians Association.
1980-1987 Founder and first Director of the Portuguese School of Optics and Optometry.

Professional (Research) Career:

1985 - Appointed Principal Scientist in a documented public contest.
1984 - Passed the exams for Principal Scientist at LNETI.
1979-1985 - Senior Research Officer of LNETI (National

Laboratory for Engineering and Industrial Technology) in a public contest.
1978-1979 - Specialist (Research Officer) at the JEN - Nuclear Energy Commission.
1975-1978 - Assistant 2nd class at the JEN - Nuclear Energy Commission.
1969-1975 - Assistant 3th class at the JEN - Nuclear Energy Commission.
1968-1969 - While a student he had a grant from the Nuclear Energy Commission (JEN) - Junta de Energia Nuclear.

Management and Entrepreneurial Activities:

1999 - Science Administrator NATO
2004 - Chairman of SIDES S.A. Board of Direction
2001 - Cientific Coordenator UNIDCOM/IADE (Research Unit in Communication and Design)
1998 - 2002 Appointed by the Portuguese Industrial Association to be a member of the EuroDefense Group (Portugal).
1997 - 1999 Vice-President of the Strategic Council of EMPORDEF - Empresa Portuguesa de Defesa,S.A. (Portuguese Defense Company).
1996 - 1999 President of NAIPTEL - Núcleo das Industrias de Telecomunicações da Associação Industrial Portuguesa (Telecommunications Industries Group of the Portuguese Industrial Association).
1991 - 1999 Chief of the PoSAT Consortium (EFACEC,S.A.; ALCATEL; MARCONI; OGMA, S.A.; IST; UBI; CEDINTEC) which build and sucessfully launched Po-SAT1, a portuguese satellite on the 26th September 1993. The PoSat satellite, a LEO, serves Portuguese troops in peace keeping missions in Bosnia, Angola and wherever and whenever it is necessary. It is also linked to 140 stations around the globe for VITA and Jackson & Tull.
1990 - Chairman of the Portuguese Chapter of AFCEA - Armed Forces Communications and Electronics Association.
1983 - 1999 Member of the Board of EID - Empresa de Investigação e Desenvolvimento de Electrónica. S.A., (private company with 214 employees, 140 being engineers).
1985-1997 Director General of the Information Technologies Institute of LNETI (Government Institute with 110 employees, 60 scientists, 30 engineers and 20 technicians).
1988-1995 Director of SATCART Consortium (Geometral, S.A.; EID,S.A.; NATO-FLAD (Luso-American Foundation for Development) and LNETI) for the production of cartography from satellite imagery. SATCART consortium carried out Po-SATCART project under a Science for Stability NATO program.
1984-1988 Member of the Board of INDEP (National Defense Industries - a public company with three thousand employees).

1984-1985 First Portuguese Co-ordinator for the Eureka project.

1981-1985 Director of the Department of Nuclear Sciences and Technologies (40 employees, 30 being scientists) of the Energy Institute of LNETI.

Academies, Scientific and Professional Societies:

2000 - Elected member of the International Academy of Astronautics.

2000 - Fellow of the Academy of Political Sciences (N.Y.).

1997 - Member of the Academy of Political Sciences (N.Y.).

1994 - Elected member of the Naval Academy (Portugal).

1993 - Elected member of the Astronautic Academy (Russian Federation).

1992 - Member of the American Association for the Advancement of Science.

1992 - Member of the New York Academy of Sciences.

1990 - Made Honorary member of the Portuguese Optometrists Association.

1988 - Member of AFCEA - Armed Forces Communications and Electronics Association (U.S.A.).

1987 - Elected correspondent member of the National Academy of Sciences (Portugal).

1983 - Elected member of the Lisbon Geographical Society.

1976 - Founder member of the Portuguese Physical Society.

Special Project For The Years 2004/2006:

Starting up the School of Performing Arts under the guidance and supervision of Dr. Ana Melo e Sousa.

Scientific and Technological Activities:

In 1977 he was honoured with the Prémio Pfizer for results obtained in the medical applications of image processing. He was awarded the Prémio Gulbenkian de Ciência e Tecnologia in 1978 and in 1982 for the development of algorithms for the calculation of optical systems and for the application of laser techniques to the characterization of textiles. In 1989 the Sociedade Histórica da Independência de Portugal honoured him, for the body of his scientific work, with the Prémio da Identidade Nacional. For work developed in the field of information theory he received the Prémio da Boa Esperança in 1990. In the same year he was made an honorary member of the Professional Union of Portuguese Opticians and Optometrists for his contribution to the advance of Optics and Optometry in Portugal. The Casa de Imprensa voted him Scientist of the Year in 1993, awarding him the Prémio Bordalo. For his contribution to the advancement of scientific and technical knowledge of communications systems, electronics, intelligence and information theory he was awarded a Meritorious Service Award by AFCEA-International in 1994. The Porter Report

(1995) refers to, as one of four successful examples, his work on the application of optoelectronics to the cork industry. In 1996 he received the Albert J. Myer Achievement Award for his work on information theory. In 1998 the National Opticians Association honoured him with the "Diploma of Merit" for his research results in Optics. At present his main subject is Information Theory. He is directing and lecturing a course on "Information Warfare" at Universidade Independente in collaboration with John Dockery (Defence Information Systems Agency), George Papcun, Cliff Joslyn and Luis Rocha (Los Alamos National Laboratory), Eric Bonabeau (Santa Fé Institute). He has supervised nine Ph.D. thesis.

Engineering Activities:

Holder of five patents, he has designed and developed the engineering of various products currently in industrial production, some of which have been exported.

Of these products the following are noteworthy (the date indicates when production started):

Optical Components (IOLA) for export (1976...); Overhead Projector (FOC Escolar) for export (1977...); Optics Kit (FOC Escolar) (1980...); Aiming Collimator (INDEP) for export (1982...); Machine for straightening gun-barrels (INDEP) (1983); Night Vision (INDEP) exported (1984); Granite Optical Benches (PRECIOPTIC) for export (1985...); Interferometer for the measurement of displacement, angles and velocity (PRECIOPTIC) (1985); Textile Robot (EFACEC) (1986); High-Precision Displacement Tables (PRECIOPTIC) (1987); CO2 Laser (EFACEC) (1987); SITPUL Combat Simulator (INDEP, EID) for export (1987); Weaving Management Systems (EID) (1987); Textile Pattern Generating Systems (EID) (1988); Real-Time Intelligent Vision Systems (EID) for export (1991); Systems for the Detection of defects in Textiles, Leather, Granite and Marble (1992); Infra-red Barriers (EID) (1992); Machine for the automatic punching of cork stoppers (Mecanova) (1993); Po-SAT1 Satellite (Po-SAT Consortium - INETI - EFACEC - ALCATEL - MARCONI - OGMA - IST - UBI - CEDINTEC) launched and operational since 26th September, 1993; Systems for the measurement of the solid volume of truck-loads of wood, exported to Brazil (1994); Satellite communications stations in operation throughout the world for the Portuguese Armed Forces. This product elicited the following comment from General Cerqueira Rocha in his Army Day speech on 25th July, 1996:

“With respect to co-operation with national industries the co-operation with the Instituto de Tecnologias de Informação deserves particular distinction, as a result of which the permanent and campaign communications of the Army are integrated, through a satellite link, within the National POSAT Project. Terminals of this satellite are operating

within the UNAVEM III programme and shortly in Bosnia-Herzegovina.

Images archive captured by PoSaT1

Of those products produced for industrial users those of note are:

Projector of Conventional and Structured Laser Light (ESTEREOFOTO) (1979); System for the Inspection of Diamonds (DIALAP) (1979); Paralelitex (IT - ANIL) for export (1980); Pilositex (IT - ANIL) for export (USTER - Switzerland) (1982); System for the Inspection of Detonators (INDEP) (1983); Telescope for Tension Measurement (COVINA) (1989).

Medals and Decorations:

1992 - Knight Commander of the Military Order of Santiago da Espada.

1990 - Medal of Merit of the City of Guarda.

Publications:

As a specialist in the theory of information, optics and optoelectronics he has published worldwide over two hundred papers. He has four books published in Portugal (1983; 1991; 1994; 1995), one in the Russian Federation (1996) and contributed to another one in the U.S.A. (1993).

- "Lasers - Normas Básicas de Segurança", Editorial LNETI, Paço do Lumiar, Lisbon, 1983. J. Araújo Silva, F. Carvalho Rodrigues.

- "Sistemas, Entropia, Coesão", Editorial Discórdia, Lisbon, 1991. J. Pinto Peixoto, F. Carvalho Rodrigues.

- "The Military Landscape - Mathematical Models of Combat", Woodhead Publishing Ltd., Cambridge U.K., 1993. J. T. Dockery, A. E. R. Woodcock, F. Carvalho Rodrigues.

- "As Novas Tecnologias, O Futuro dos Impérios e os Quatro Cavaleiros do Apocalipse". Publicações Europa-América, Lisbon, March 1994. F. Carvalho Rodrigues. Translated into Russian and published by "MIR" in 1996.

- "Ontem, Um Anjo Disse-me - diálogos para o século XXI". Publicações Europa-América, Lisbon, March 1995. 3th Edition in January 1999. F. Carvalho Rodrigues, Luis Ramos. (search by title at editor's homepage)

- Coordinator the edition of DIDACTA from F. Guerreiro Pereira, Lda.

- Produced, for the same editor, videos about Mathematics, Physics, Chemistry and Geology-Biology.

- Collaborates with the authors of Texto Editora Physics Books of the 8º, 9º, 10º, 11º and 12º years.

By the way:

Member of "CENTRO NÁUTICO MOITENSE"

He loves music. Specially if it is opera.

He plays golf with an handicap 20.

He is a "FRIEND" of the "National Ancient Art Museum", Lisbon and of the "Musées Royaux des Beaux Arts de Belgique".

He is an associate member of the "Metropolitan Museum of Art" since 1985 and of the "American Museum of Natural History" since 1987.

Mainly he enjoys life.