PROFESSIONAL RESUME OF KONSTANTINOS ZEKENTES

CAREER OBJECTIVE

Research and development in the area of compound semiconductors and microelectronics. The last decade the emphasis was devoted in SiC device technology development for power and biomedical applications. The last three years the main effort is dedicated to the development of SiC-based neural interfaces and biosensors.

EDUCATION

B.A. Physics, 1983	University of Crete-Greece
Ph.D. Physics of Semiconductors, 1989	University of Montpellier-France; Dissertation: "Study of weak localization and electrons interactions in two dimensional electron gas under hydrostatic pressure"; Advisor: Professor J. L. Robert

PROFESSIONAL BACKGROUND

Nov 2026 *Resarch Director at MRG-IESL-FORTH and visiting researcher in Grenoble-INP / Laboratoire CROMA*

Nov. 2017- present Principal Researcher at MRG-IESL-FORTH and visiting researcher in Grenoble-INP / Laboratoire CROMA

His research interests entail:

(a) devices (biosensors and neural electrodes) for biomedical applications.
(b) SiC device technology issues,
(c) physical characterization, to determine the optimum methods for evaluating the material quality prior, during and after the SiC device processing,
(d) SiC nanotechnology, with emphasis on SiC nanowires.

In summary, he coordinates and supervises the MRG's and CROMA's effort for the development of SiC-related technology for elaborating high power and biorelated devices.

2016 - 2017 *On leave in Grenoble-INP / Laboratoire IMEP-LAHC (now CROMA)*

The subject of his work was the development of technology of SiC-nanowire - based devices. In parallel he organized the ECSCRM'16 and edited 2 volumes on SiC device technology in which co-authored 4 chapters.

Jan. 2001- 2016 *Principal Researcher* at MRG-IESL-FORTH.

He conducted research on

(a) 4H-SiC based power devices (diodes and JFETs) for low frequency applications
(b) physical characterization, to determine the optimum methods for evaluating the material quality prior, during and after the SiC device processing,
(c) nanotechnology, to develop SiC-based Nanowire Field Effect Transistors (SiC-NWFETs).

(d) the development of high frequency-high power (pn switching) diodes based on 4H-SiC.

From April 2003 to April 2009 Dr. Zekentes was member of the Scientific Board of the IESL.

Until 2013, Dr. Zekentes was the manager of the liquid nitrogen production facility of IESL and he was also member of IESL's committees for the Institute's public relations and equipment registration.

From June 2008 to September 2012 Dr. Zekentes was the chairman of the FORTH researchers' association.

1995-2000 *Associate Researcher* at MRG-IESL-FORTH.

He conducted research relative to the:
(a) MBE SiC/Si heteroepitaxy,

(b) the development of high frequency-high power (IMPATT) diodes based on 4H-SiC,
(c) the fabrication of Quantum Well Infrared Photodetectors (QWIP) based on III-V materials (until 1999).

Dr. Zekentes was also one of the organizers of the master degree on "Microelectronics-Optoelectronics" of the Dept. of Physics which has been launched in September 1998.

1991-1995 *Physicist-Researcher* at MRG-IESL-FORTH

Until January 1995 Dr. Zekentes conducted basic research in Molecular Beam Epitaxy (MBE) and contributed in the investigation of devices like Hall-effect sensors (now commercially available by Schlumberger (now ITRON), model CENTRON) and PM-HEMTs. The MBE-related research effort concentrated on growth of :
I) InGaAs and InAlAs layers on InP substrates,
II) GaAs/GaAlAs p-i-n modulators on Si substrates,
III) GaAlAs/InGaAs based PM-HEMTs and sensors.
IV) SiC films on Si substrates.

Dr. Zekentes was the person who took the initiative to launch a SiC-related research effort in MRG.

1989-1990 *Military service/Part-time research at MRG-IESL-FORTH.*

Dr. Zekentes continued his previous effort on the examination of localization effects in 2D electron gas systems and was initiated in the MBE growth of III-V compounds.

1984-1989 *Graduate Researcher*, University of Montpellier, Groupe d'Etudes des Semiconducteurs. Research on transport properties of two-dimensional electronic systems at low temperatures, low magnetic fields and under hydrostatic pressure.

TEACHING AND SUPERVISION EXPERIENCE

He taught various courses in the Technical Institute of Heraklion (Adjunct Associate Professor 1991-1992), in the Department of Physics - Univ. of Crete (Adjunct Associate Professor 1999-2000 and at the Summer School of Advanced Physics since 1992), in the Ecole Nationale Superieure de Physique de Marseille (1999), in the Université François Rabelais de Tours (2001) and in the Catania University (2014).
Dr. Zekentes was/is the responsible person for 25 Bachelor, 11 Master and 7 Philosophical Degree dissertation supervisions as well as 5 post-doctoral collaborations.

PROFESSIONAL ACTIVITIES

He serves as a reviewer for various scientific journals and for EU research proposals and projects.

National level positions

2005-2020	representative of Greece in steering committee (up to 2008), public authorities board (PAB) (up to 2010) and Governing Board (GB) (2010-present) of European ENIAC-ECSEL technology platform – Brussels
2019-present	representative of Greece in Working party on Biotechnology, Nanotechnology and Converting Technologies (BNCT)

Scientific program/organization committees

May 1996	European Materials Research Society (E-MRS (96). Symposium on High Temperature Electronics: Materials, Devices and Applications. Strasbourg, France.
October 1996	Secretariat of the European Conference on Silicon Carbide & Related Materials. He had the idea, took the initiative and with Prof. J. L. Robert and Prof. J. Stoemenos were the beginners of this series of conferences.
September 1998	European Conference on Silicon Carbide & Related Materials (ECSCRM '98). Montpellier, France, 2-4 September 1998.
October 1998	Symposium on Microelectronics in Greece: Possibilities for industrial exploitation, Athens, Greece, 30 October 1998.
May 2000	Chairman of the local committee of the EXMATEC 2000 held in Heraklion, Greece.
May 2000	Member of the local committee of the WOCSDICE 2000 held in Greece.
May 2003-2012	Member of the Steering Committee of the HETECH workshop.
October 2004	Chairman of the organizing committee of the HETECH'04 held in Heraklion, Greece.
2006-present	Member of Program Committee of European Conference on Silicon Carbide & Related Materials (ECSCRM) and International Conference on Silicon Carbide & Related Materials (ICSCRM)
June 2014	Chairman of the WOCSDICE 2014 and Co-Chairman of EXMATEC 2014 held in Delphi, Greece.
2014-present	Member of Steering Committee of WOCSDICE (European Workshop on Compound Semiconductor Devices and Integrated Circuits))
2014-2022	Member of Steering Committee of European Conference on Silicon Carbide & Related Materials (ECSCRM)
May 2016	Co-organizer of the Spring E-MRS Symposium L "*Wide bandgap materials for electron devices*" held in Lille, France
September 2016	Co-Chairman of ECSCRM 2016 held in Halkidiki, Greece.
October 2016	Member of the local organizing committee of European Space Power Conference (ESPC'2016) held in Thessaloniki, Greece.
May 2024	Co-Chairman of the WOCSDICE/EXMATEC 2024 Heraklion, Greece

Research Institutes evaluation committees

December 2010	Laboratoire CREMAN, Tours, France. Evaluation organized by AERES, France.

Society membership

Materials Research Society. IEEE society (senior member). Greek MicroNano scientific society.

2015-2018 President of Greek MicroNano scientific society.

Invited papers/talks in Conferences/Summer Schools

"4*H*-SiC IMPATT Diode Fabrication and Testing"
International Conference of Silicon Carbide & Related Materials 2001 (ICSCRM'01), Oct. 2001, Tsukuba, Japan

"SiC-based microwave diodes"
1st TARGET Summer School on "Microwave Transistors: Materials and Devices", Sept. 2004, Heraklion, Greece

"SiC-based microwave diodes"
Workshop on Advanced Power Devices 2004, Sept. 2004, Bucharest, Romania.

"4H-SiC pin diodes for microwave applications"
CAS 2005, October 2005, Sinaia, Romania.

"High frequency SiC-based PIN diodes"
16th European Workshop on Heterostructure Technology (HETECH 2007), San Rafael, France, September 2007

"Silicon Carbide Nanowire Field Effect Transistors"
13th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN 2016), October 2016, Frascati, Rome, Italy

"Technology and performance of SiC-based Nanowire Field Effect Transistors"
CAS 2017, October 2017, Sinaia, Romania.

"Technologie SiC pour le bio-médical et autres applications "
École thématique CNRS Avenir Grand Gap, May 2021, Troyes, France.

"SiC device processing technology. Application to the fabrication of neural interfaces and biosensors "
WOCSDICE 2025, June 2025, Cadiz, Spain

RESEARCH GRANTS

Dr. Zekentes was the principal investigator and the responsible person for the development of the grant concerning FORTH's contribution of more than 20 projects with a total budget ofmore than 1.5 MEuros.