

Julio Fleming Dias



Electronics-Scientist & Inventor

(Hewlett Packard - now HP), California, USA.

Born: 9 Dec 1927 in Vasco da Gama, Mormugão, Goa.

Son of Eng. Luis Bismarck Dias and Ilda Rodrigues Dias (Campal). Husband of Frances. Brother/brother-in-law of late Elsa/Rui Lopes (Vasco), Maria dos Anjos/late Albert Joanes (Margão), Maria de Lourdes/late Filomena Pereira (Bandra) and Maria Luiza/late Kevin Vaz (Miramar). Died: 11 May 2009 in Nice, France.

Education:

He graduated in Civil Engineering from the University of Poona in 1954 and post-graduate studies in Electronics Engineering at the University of Michigan.

At Michigan Research Institute, he worked on air pollution control and researched on the influence of smoke from factories located around Pittsburgh. Fleming also undertook aerodynamic studies to learn the effect of sonic boom in airport structures.

Career: In 1962, he worked for Zenith Radio Corp, where he obtained two patents about FM (frequency modulation) and SAW (surface acoustic wave).

In 1972, he joined Hewlett-Packard in Palo Alto, California until his retirement in 1997.

He was a senior member of the IEEE (Institute of Electrical and Electronics Engineers) and enjoyed photography, music, and travel when he was not experimenting in his home electronics laboratory.

His inventions included patents on ultrasound imaging devices, invasive blood pressure devices, intravascular ultrasound imaging devices, etc.

Some of his contributions to engineering and technology include, 24 United States Patents:

US6190323	Direct contact scanner and related method
US6113541	Noninvasive blood chemistry measurement method and system 09/05/2000
US5827181	Noninvasive blood chemistry measurement method and system
US5813998	Method and system for coupling acoustic energy using an end-fire array
US5713916	Method and system for coupling acoustic energy using shear waves
US5577506	Catheter probe having a fixed acoustic reflector for full-circle imaging
US5515850	Apparatus for coupling acoustic waves with an acoustic waveguide
US5511296	Method for making integrated matching layer for ultrasonic transducers
US5488955	Magnetostriction transducer and an intraoperative probe for acoustic imaging – 02/06/1996
US5435314	Intravascular imaging catheter tip having a dynamic radius - 07/25/1995
US5400788	Apparatus that generates acoustic signals at discrete multiple frequencies and that couples acoustic signals into a cladded-core acoustic waveguide – 03/28/1995
US5291090	Curvilinear interleaved longitudinal-mode ultrasound transducers 03/01/1994
US5284148	Intracavity ultrasound diagnostic probe using fiber acoustic waveguides...02/08/1994
US5271402	Turbine drive mechanism for steering ultrasound signals 12/21/1993
US5217018	Acoustic transmission through cladded core waveguide 06/08/1993
US5152291	Acoustic fiber measurement of intravascular blood 10/06/1992
US5060653	Ultrasonic sensor with starved dilatational modes 10/29/1991
US5025790	Graded frequency sensors 06/25/1991
US4992692	Annular array sensors. 02/12/1991

- US4482834 An improved annular array sensor [10] that facilitates hermetic sealing and uses optimum acoustic matching layers is disclosed.
Acoustic imaging transducer. 11/13/1984
- The acoustic imaging transducer described herein incorporates an acoustic stack contained in an alumina housing which also provides structure for electrically connecting the transducer array elements to system signal processing electronics...
- US4384228 Acousto-electric transducer. 05/17/1983
- An array of transducers is mounted on a base and means are provided for causing surface waves that emanate in opposite along the base to be reflected by transducers on either side so as to follow paths of respectively different lengths in going...
- US4129242 High fidelity pressure transducer. 12/12/1978
- The capacitive fluid pressure transducers described herein comprise quartz bodies and diaphragms having suitable appropriate configurations for high fidelity measurement ...
- US4064550 High fidelity pressure transducer. 12/20/1977
- The capacitive fluid pressure transducers described herein comprise quartz bodies and diaphragms having suitable electrodes deposited thereon to form both sensing and reference capacitors in appropriate configurations for high fidelity measurement of rela...
- US 3005919 Dual-Function Device, Filed Aug. 12, 1960

Publications:

1. "Stress Effects in Acoustic Surface Wave Circuits and Applications to Pressure and Force Transducers," Pro IEEE International Solid-State Circuits Conference Proceedings, pp. 166-167.
2. "Frequency/Stress Sensitivity of SAW Resonators," Electronics Letters, Vol. 12, no. 22, October 28, 1976, pp. 580-582.

References:

1. <https://luisdias.wordpress.com/2009/05/18/in-memori-am-engineer-julio-fleming-dias/>
2. <https://galeriadosgoesesilustres.blogs.sapo.pt/064-julio-fleming-dias-0911927-16439>
3. Hewlett-Packard Company, American manufacturer of software and computer services and a major brand in the history of computers and computer-related products.
4. Electronics is a branch of Physics that deals with the theory and use of devices in which the electrons travel through a vacuum, gas, or a semiconductor medium.

Themistocles D'Silva, 2023