

## Dr. Ray Franco, PhD., PE, CFEI | Senior Forensic Electrical Engineer

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### Professional Summary:

Dr. Ray Franco, PhD., PE received his Doctorate, Master's and Bachelor's degrees from Mississippi State University in the field of Electrical Engineering. He is a licensed professional engineer in the following states: Mississippi, Alabama, Louisiana, Arkansas, Missouri, Georgia, and Florida. For the past 20 years, he has practiced in the field of Forensic Electrical Engineer – analyzing and testifying on the characteristics of electrical systems and products. He has worked on behalf of insurance companies, manufacturers, utilities, and attorneys. He has been accepted as an expert witness and testified in Federal, State and Criminal Courts. Prior to his forensic work, he was a research electrical engineer for 28 years with the U.S. Army Engineering Research and Development Center.

### Licenses and Certifications:

Professional Engineer, State of Mississippi, License #7155

Professional Engineer, State of Louisiana, License #31177

Professional Engineer, State of Alabama, License #28163E

Professional Engineer, State of Arkansas, License #12673

Professional Engineer, State of Georgia, License #PE032993

Professional Engineer, State of Florida, License #65763

Professional Engineer, State of Missouri, License #2007032424

Fire Alarm ITM Specialist, NFPA, Certification #CFAITMS-FM-18-047

Certified Fire and Explosion Investigator, NAFI, #CFEI-10031-4612

### Court Qualifications/ Depositions:

Litigation CV available upon request.

### Professional Experience:

EFI Global, Senior Forensics Electrical Engineer, 2004-2020

Self Employed, Forensics Electrical Engineer, 2003-2004

U.S. Army Research & Development Center, 1976-2003

### Education:

Doctor of Philosophy (PhD), Electrical Engineer, Mississippi State University, Mississippi State, MS 1986.

### Affiliations:

Institute for Electrical and Electronics Engineers (IEEE), Senior & Life Member

National Society for Professional Engineers (NSPE)

National Fire Protection Association (NFPA)

National Association of Fire Investigators (NAFI)

International Association for Arson Investigators (IAAI)

IEEE Mississippi Section, Past President & Webmaster

Mississippi Fire Investigators Association (NFIA)

Alabama Association of Arson Investigators

Louisiana Chapter of the IAAI

### Courses Instructed/ Guest Lecturer:

Instructor: Electrical Aspects of Fire Investigations (6-day course) taught at the National Fire Academy in Emmitsburg, MD.

Instructor: Electrical Fire Investigations (3-day course) taught at the Arkansas State Fire Academy.

Guest Lecturer: Mississippi Fire Investigator Association.

Guest Lecture: Louisiana Chapter of the International Association of Arson Investigators.

Instructor: EE8763 Finite and Infinite Machines, Graduate Course, Mississippi State University.

Instructor: EE6723 Advanced Microprocessors II, Graduate Course, Miss State University

Instructor: EE2731 Digital Devices, Mississippi State University

Instructor: Introduction to Computer Logic Devices, Auburn University

Instructor: Digital Electronics, Jackson State University.

### Publications and Presentations:

Charles Joseph McClain, AIA, "When Bad Things Happen to Good Buildings - Red Flags in Property Condition Assessments: A Reference Guide to Problematic Building Materials and Conditions in the United States" – 2017 Edition, ISBN 978-1537094779 – 2017.

"Fire Investigator: Principles and Practice to NFPA 921 and 1033, Fourth Edition", Jones and Bartlett Learning, LLC, and the National Fire Protection Association – 2016.

Aziz, M.J., Johnson, A.C., Introduction to Energy Technology: Depletable and Renewable Wiley, ISBN 978,3-527-33241-0 – 2014.

Franco, R.A., Phillips, G.G., "Improved Shock Hardened Data Acquisition System" Proceedings of the 68th Shock and Vibration Symposium, Baltimore MD – 1998.

Franco, R.A., "Hardened Data Acquisition System for Harsh Environments" NASA Tech Briefs, Vol. 20 No.7 – 1996.

Franco, R.A., Owens J.K., "A Miniature, Shock Hardened, Transient Data Recorder", Proceedings of the 66th Shock and Vibration Symposium, Vol.2 pp 147-156, Biloxi, MS – 1995.

Franco, R.A., "Multi-Channel HDAS Penetration Data", Proceeding of the Penetration Technology Coordination Group, Vicksburg, MS – 1994.

Franco, R.A., Ingram, J.K., "MIDAC, A Miniature Integral Data Acquisition Canister for Blast Pressure Measurements Using the WES-Developed HDAS Autonomous Digital Data Acquisition System", WES Technical Report SL-94-5, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS – 1994

Franco, R.A., Ingram, J.K., "A Self-Contained, Multi-Channel, Shock-Hardened Data Acquisition System", Defense Nuclear Agency Conference on Instrumentation for Nuclear Weapons Effects Testing (INWET'93), Menlo Park, CA - 1993.

Franco, R.A., Ingram, J.K., "A Very High Shock Recorder", Proceedings IEEE Southeastcon, Institute of Electrical and Electronic Engineers, New York, NY – 1991.

Franco, R.A., Ingram, J.K., "New Advances and Experiences with HDAS", Defense Nuclear Agency Conference on Instrumentation for Nuclear Weapons Effects Testing (INWET'91), Vicksburg, MS 1991.

Franco, R.A., Ingram, J.K., "Recent Experience with the CEWES-Developed Hardened Data Acquisition System (HDAS)," Proceedings of the 37th International Instrumentation Symposium, Instrument Society of America, pp 511-524, Albuquerque NM – 1991.

Franco, R.A., Ingram, J.K., "A Very High Shock, Self-Contained Data Acquisition System", Army Science Conference, Durham, NC - 1990.

Franco, R.A., Ingram, J.K., "A Super-Hardened, Self-Contained Digital Acquisition System", Proceedings of the 36th International Instrumentation Symposium, Instrument Society of America, pp 649-659, Research Triangle Park, NC - 1990.

Franco, R.A., Ingram, J.K., "HDAS, A Miniature, Self-Contained, Super-Hardened, Digital Data Acquisition System (module)", Paper No. 78, Defense Nuclear Agency Conference on Instrumentation for Nuclear Weapons Effects Testing (INWET'89), Monterey CA – 1989.

Franco, R.A., "A Self-Contained Shock Hardened (100Kg) Data Acquisition System, Report 1, Design and Development", WES Technical Report TR-0-88-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS - 1988.

Franco, R.A., "Networks of Markovian Queues", WES Technical Report TR-0-87- 2, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS - 1987.

### Honors and Awards:

U.S. Army Research Development and Acquisition Award, Department of the Army, 1991.

U.S. Army Science Conference, Honorable Mentioned Paper, Department of the Army 1990.

U.S. Army Research & Development Award, Army Engineering R&D Center, 1989.

U.S. Army Outstanding Performance Awards, Army Engineering R&D Center, 1991-1998.

U.S. Army Commendation Medal, Department of the Army, 1975.