

DR. ING. MOHAMED YEHIA EID,
ASSOCIATED PROFESSOR



Dr. ing. Mohamed Yehia Eid was a Research-Engineer (1985–2020) and then a Senior Expert (2001–2020), at the French Alternative Energies and Atomic Energy Commission (CEA). In parallel, he was an Associated Professor (2005–2020), at the National Institute of Applied Sciences of Rouen Normandie (Department of Mechanics – LMN/INSA Rouen, France), conducting academic research, lecturing and teaching reliability theory, system performance, probabilistic assessment, system modelling and optimization. He is currently an independent consultant working for academia and industry.

His skills and expertise are: probabilistic models, modelling and simulation, stochastic models and processes, Markov processes, metaheuristic algorithms, crisis and risk management, emergency management, uncertainty and failure analysis, applied probability, complex systems, critical infrastructure resilience.

Scientific titles and degrees

- Doctor Engineer *in nuclear energy*, 1985, from the University of Paris XI, France.
- MSc in *mechanical engineering*, 1981, jointly from the Institute of Sound and Vibration Research – University of Southampton, UK and the Department of Engineering Mechanics – University of Zagazik, Egypt.
- BSc in *nuclear engineering*, 1977, from Alexandria University, Nuclear Engineering Department, Egypt.

International activities

- Invited lecturer in the Educational Technical Programs organized by the Chair of Engineering Teaching – UNESCO – AGH – Crackow, Poland: *Digital Campus of Science & Technology*, 2022.
- Active member both of the European Safety and Reliability Association (ESRA) and of the European Safety, Reliability & Data Association (ESReDA) since 1995:
 - President of ESReDA (2020–2024),
 - Vice-president of ESReDA (2014–2018),
 - General Secretary of ESReDA (2001–2010).

- Member of the Institute of Risk (IMdR), France.
- Member of the Institute of Electrical and Electronics Engineers (IEEE), USA.
- Former member in many international working groups: Neutronic Expert Group (ITER), System and Components Failure Data Group (IAEA – Fusion agreement) and in other expert networks.
- Member of different program committees and scientific committees of international conferences: *European Safety, Reliability and Data Association Seminars (ESReDA)*, *Summer Safety and Reliability Seminars (SSARS)*, *International Conference on Critical Information Infrastructures Security (CRITIS)*, *UNESCO Chair of Engineering Teaching workshops (UNESCO – AGH – Crackow, Poland)*, *Congrès Lamda Mu*, *European Safety and Reliability Conference (ESREL)*, *International Conference on Reliability, Maintainability and Safety (ICRMS)*.
- Member of editorial boards of *Journal of Risk and Reliability*, *Journal of Polish Safety and Reliability Association*, and *Central European Journal of Engineering*.



Engineering professional history

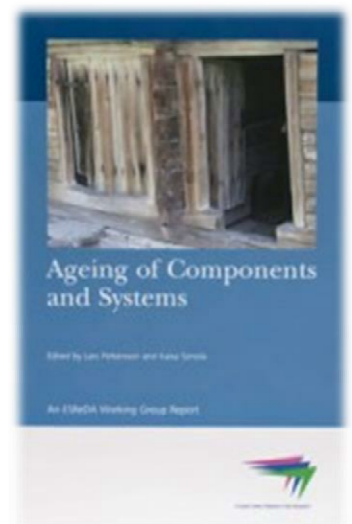
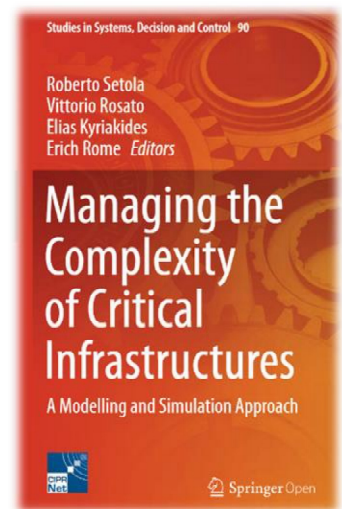
- Senior Expert at the CEA, Saclay, France, in neutronics and nuclear reactors design and radiation shielding, in probabilistic risk assessments and stochastic modeling (2001–2020).
- Associated Professor at the INSA, Rouen, France, at the Department of Mechanics, teaching reliability theory, system performance, probabilistic assessment, modeling and optimization (2005–2020).
- Fusion reactors design activities in the period (1988–2005), CEA, Saclay, France.
- Nuclear reactors dismantling activities in the period (1985–2000), CEA, Saclay, France.
- Risk assessment and systems reliability analysis (1985–2020), CEA, Saclay, France.
- Research Engineer at the CEA, Saclay, France, in neutronics & nuclear reactors design, in probabilistic risk assessments and stochastic modeling (1985–2020).

Academia professional history

- Teaching positions (system reliability and safety) in the INSA, Rouen, France, EUROSAR, Paris, France, ECP, Paris, France, SupAero, Toulouse, France.
- Co-supervision of PhD research work, Université de Technologie de Compiègne and INSA, Rouen, France.
- Co-supervision of MSc research, CEA and INSA, Rouen, France.
- Supervising engineer graduation internships, CEA and INSA, Rouen, France.

Scientific publications

- Co-writer of *Managing the Complexity of Critical Infrastructures: A Modelling and Simulation Approach*. Studies in Systems, Decision and Control 90, 2016. R. Setola, V. Rosato, E. Kyriakides, E. Rome (Eds.). Springer Open, Library of Congress Control Number: 2016960289.
- Co-editor of the 32nd *ESReDA Seminar Proceedings on Maintenance Modelling & Optimisation*, 2007, Alghero, Sardinia, Italy.
- Co-writer of *Ageing of Components and Systems*. Edited by the European Safety, Reliability & Data Association, 2006, printed and commercialised by Det Norske Veritas AS, NO-1322, Hovik, Norway.
- Co-writer of *Lifetime Management of Structures*. Edited by the European Safety, Reliability & Data Association, 2004, printed and commercialised by Det Norske Veritas AS, NO-1322, Hovik, Norway.
- Szpak, D., Tchórzewska-Cieślak, B., Pietrucha-Urbanik, K. & Eid, M. 2022. A grey-system theory approach to assess the safety of gas-supply systems. *Energies* 15, 4240
- Pietrucha-Urbanik, K., Tchórzewska-Cieślak, B. & Eid, M. 2021. A case study in view of developing predictive models for water supply system management. *Energies* 14, 3305.
- Tchórzewska-Cieślak, B., Pietrucha-Urbanik, K. & Eid, M. 2021. Functional safety concept to support hazard assessment and risk management in water-supply systems. *Energies* 14, 947.
- Pietrucha-Urbanik, K., Tchórzewska-Cieślak, B. & Eid, M. 2020. Water network-failure data assessment. *Energies* 13(11), 2990.



- Piegdoń, I, Tchórzewska-Cieślak, B. & Eid, M. 2018. Managing the risk of failure of the water supply network using the mass service system. *Maintenance and Reliability* 20(2), 280–287.
- Tang, X. El-Hami, A., El-Hami, K., Eid, M. & Si, C. 2017. Elastic properties of single-walled carbon nanotube thin film by nanoindentation test. *Nature Scientific Reports* 7:11438.
- Eid, M., Souza de Cursi, E., El-Hami, A. 2017. Decision making in crisis management: time criticality assessment. *Journal of Polish Safety and Reliability Association Summer Safety and Reliability Seminars* 8(1), 13–21.
- Dundulis, G., Žutautaitė, I., Janulionis, R., Ušpuras, E., Rimkevičius, S. & Eid, M. 2016. Integrated failure probability estimation based on structural integrity analysis and failure data: natural gas pipeline case. *Reliability Engineering and System Safety* 156, 195–202.
- Eid, M., Kling, T., Hakkarainen, T., Barbarin, Y., Grangeat, A. & Serafin, D. 2016. Cascading failures: dynamic model for CIP purposes – case of random independent failures following Poisson stochastic process. Panayiotou et al. (Eds.) *Lecture Notes in Computer Science. CRITIS International Conference on Critical Information Infrastructures Security 2014, LNCS 8985*, 326–331, Springer.
- Grangeat, A., Bony A., Lapebie E., Eid M. & Dusserre G. 2016. The challenge of critical infrastructure dependency modelling and simulation for emergency management and decision making by the civil security authorities. Rome et al. (Eds.) *Lecture Notes in Computer Science. CRITIS International Conference on Critical Information Infrastructures Security 2015, LNCS 9578* 255–258.
- Chu, L., Souza De Cursi, E., El Hami, A. & Eid, M. 2015. Reliability based optimization with metaheuristic algorithms and Latin hypercube sampling based surrogate models. *Applied and Computational Mathematics* 4(6), 462–468.
- Chu, L., Souza De Cursi, E., El Hami, A. & Eid, M. 2015. Application of Latin hypercube sampling based Kriging surrogate models in reliability assessment. *Science Journal of Applied Mathematics and Statistics* 3(6), 263–274.
- Eid, M. 2011. A general analytical solution for the occurrence probability of a sequence of ordered events following Poisson stochastic processes. *Journal of Reliability Theory & Applications*, RT&A # 03 (22) (Vol. 2), 102–113.
- Chiquet, J., Limnios, N., & Eid, M. 2009. Piecewise deterministic Markov processes applied to fatigue-crack growth modelling. *Journal of Statistical Planning and Inference*, 139, 1657–1667.