Call for Papers
Special Session 05 - Machine Learning and Data Analytics for Failure Analysis in Automation and the Manufacturing Industry

Organized and Co-Chaired by

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❖ **FOCUS**. In automation and manufacturing industry, products are becoming more and more integrated and complex. These high technological products must operate reliably and safely in daily use as they are used in safety-critical applications (e.g. automotive domain). Post-production Failure Analysis is a process to build a progressive diagnosis and understanding of failure factors, leading to in-depth root cause analysis. In spite of a highly technological environment, the industrial process of Failure Analysis is often carried out manually, driven by single tasks coming from production, reliability testing and field returns, and relies heavily on human expert knowledge. Automation offers important opportunities here to improve the efficiency of failure analysis. Artificial Intelligence and Machine Learning algorithms are increasingly playing a leading role in suggesting solutions in fields related and not limited to anomaly detection, condition monitoring, failure analysis and root cause analysis in many domains. Therefore, this special session aims at discussing recent advances and developments in this field. In addition, recent advances coming from Industry 4.0 to support failure analysis on high technology manufactured devices are highly relevant for further automation of the failure analysis and are welcomed in this special session.

❖ **TOPICS**

- ❖ Artificial intelligence and Machine learning for Failure Analysis
- ❖ Statistical models and formalisms for production defect analysis
- ❖ Industry 4.0 to support failure analysis, on high technology manufactured devices
- ❖ Anomaly detection on industrial devices
- ❖ Automation of Failure Analysis process
- ❖ Root cause analysis, for industrial devices' failures

❖ **AIM.** The aim of the Special Session is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of Machine Learning and Data Analytics for Failure Analysis

❖ **CONFERENCE FORMAT**. The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WiP) and industry practice sessions.

❖ **AUTHOR'S SCHEDULE (2022)**

❖Regular and special sessions papers

Submission deadline ....April 1
Acceptance notification .... May 6
Deadline for final manuscripts .... June 17

❖Work-in-progress/Industry practice papers

Submission deadline .... May 13
Acceptance notification .... June 10
Deadline for final manuscripts .... June 17