



Contact details:

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PhD. Vacancy “Industrial Quality Monitoring based on Statistical Process Control (SPC) Techniques”

Description:

Statistical Process Control (SPC) is a widely used framework for monitoring industrial processes. Within SPC, control charts are a powerful tool to detect deviations from normal operation, although they are mainly fit to processes with a fixed target. Such fixed target, however, is not present in numerous applications and the proposed research will focus on such nonstationary processes. Examples are ubiquitous and include production processes in the agro-food sector but also within the framework of monitoring industrial equipment that is subject to degradation.

Part of the research fits in the framework of an interdisciplinary research project entitled “Prognostics for Optimal Maintenance (POM)”. It is coordinated by the Flanders Mechatronics Technology Centre (FMTC). The goal of the project is to provide the tools needed to improve the way maintenance of industrial machinery is done. Today maintenance is regarded as a necessary burden to keep the machines running. However, companies agree that it would be much better if they could step down from this image and innovate the way machines and maintenance are sold. The POM consortium will leverage on the experience the industry has gained in order to solve a complex optimization problem: how to provide a better maintenance of industrial machines at a lower total cost of ownership. POM will develop tools and methodologies that will help machine builders to reduce the costs and market the whole assemble of machine plus maintenance. Our team is mainly involved in developing Statistical Process Monitoring algorithms to detect anomalies during machine operation. Those anomalies then serve as input for lifetime prediction models developed by our partners.

Keywords: Statistical Process Control (SPC), nonstationary processes, degradation

Profile: The candidate should preferably hold a degree in Statistics, Bioscience Engineering, Engineering or Physics.

Interested? Please send your CV and motivation letter to bart.deketelaere@biw.kuleuven.be. We will contact you soon!