Prognostics and Health Management for Rechargeable Batteries

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ABSTRACT

After numerous successful applications of statistical quality control and reliability methods in manufacturing industries in the past several decades, the quality paradigm has shifted from manufacturing application to field operation in many industries. This shift was triggered by continuous concerns in product reliability, system safety, and failure prevention, and made possible by latest advancement in data collection technologies and development of powerful modelling algorithms. This general field of research provides tremendous opportunities for interdisciplinary research and has been classified as prognostics and system health management (PHM). In this talk we will share our experience of PHM research in the application of rechargeable batteries through methods in data mining, diagnostics and prognostics, anomaly detection and monitoring.