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Potential of multivariate statistical process monitoring based on the biogas composition to detect free ammonia intoxication in anaerobic reactors

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Highlights

- Free ammonia nitrogen (FAN) extreme intoxication was reached at $\sim 5 \text{ g}_{\text{FAN}} \text{ L}_{\text{slurry}}^{-1}$
- Multivariate statistical process control (MSPC) models were built using only the biogas composition
- Recursively updated MSPC models detected a decrease of reactor performance early

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