



## **Improvement of hydrocarbons detector process for steam condensate from heat exchanger in an aromatics production units**

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A flame ionization detector (FID) in an Aromatics Production Unit is used to analyze the concentration of hydrocarbons leak in steam condensate. The main instruments of the system consists of stripping column and permeate dryer prior to sending to FID detector. However, this system cannot handle contaminated gas sample that contains high moisture content and its detector is sensitive to background noises. To overcome such a problem, the existing hydrocarbons detection system was modified to reduce moisture content to be within an acceptable level. The modified system was improved by using two – stages intercoolers instead of permeate dryer. The effect of parameters such as the ratio of instrumental air flow rate to gas sample, operating pressure and operating temperature were investigated by a process simulator. The result showed that the modified system was preferred because moisture contents was decreased 51.9 %w/w comparing with the original system.

**Keywords:** flame ionization detector; hydrocarbons leak; moisture content