다양한 통계기법을 이용한 화학안전 분야 시스템 개발

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In the fields of researches associated with chemical process safety, various approaches including statistical techniques have been proposed. In this research, various approaches would be introduced how to combine statistical techniques including artificial intelligence with process safety topics. The first topic is mathematical programming to optimize the plant layout. This topic can be transformed into MILP (Mixed Integer Linear Programming) problems as considering safety distances, maintenance spaces, and economic benefits for solving the multi-floor plant layout problem. The second topic is how to design a simulation for various mitigation systems. Various mitigation systems are illustrated to verify the efficacy of statistical techniques in the field of process safety.