Text Analytics in Chemical Accident Databases for Extracting Knowledge

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Chemical accidents such as explosion, leakage, and corrosion have been critical issue in chemical engineering society. Although lots of precautionary methods are studied in theoretically and practically, it is hard to keep off the catastrophe. Actually, specific information of chemical accidents has been well collected in several countries. However, many researches are just performed with numeral database by using statistics because of easy to treat. Thus, knowledge discovery in textual databases which contain exact description of circumstances through a number of cases of accident has limitations. In this work, natural language processing was performed for treating the textual data of chemical accident reports and data mining algorithms such as clustering, topic analysis, and concept link are applied for analyzing overal database simultaneously. Several intuitions and heuristics come into existence and new framework for database is suggested.