Chemical Fog Dispersion Technique

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Fog is a phenomenon that reflects a lot of danger on transportation. It is most infamous for its effect on visibility as this visibility impairment causes an abundance of car accidents that lead to significant numbers of casualties. It also results in frequent flight delays that impose substantial money losses for airline companies. Thus, this project is inherently focused on suggesting a new approach to resolving the fog problem. It is relevant not only to weather modification but also to the improvement of weather and climate prediction that support a wide range of applications such as water management and climate change adaptation. Accordingly, a weather modification experiment was designed and implemented to test the feasibility of the activity and the validity of the underpinning scientific hypothesis and to provide the basis for operational activities with the aim of fog dispersion. In order to do so, a modified fog system was developed with the usage of certain devices that produce actual fog and react to certain changes in the fog's intensity. Furthermore, according to these changes the system starts utilizing a new mixture, which consists of Titanium Dioxide, Polyacrylamide and Carbon Tetrachloride, to disperse fog once its concentration causes a decrease in the visibility within the system. After multiple experiments, this solution was determined to be successful in dispersing fog and was most effective at a concentration of 0.15.M of Titanium Dioxide per 0.4.g of Polyacrylamide per 0.14.g of Carbon Tetrachloride. Not only was this new solution effective at diffusing fog, but was also evidently cheaper and less harmful to the environment than other chemicals that are used for similar situations.

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