Effect of Reaction Rate on Dispersion of Atmospheric Aerosols in the Presence of Electric Field

Abstract

Under the effects of electric field and chemical reaction, a mathematical model has been developed to study the dispersion of aerosols in a couple stress fluid flowing through a channel which is analytically solved using Taylor dispersion model. The solutions for velocity, concentration distribution and dispersion coefficient are numerically computed and the results are represented graphically. It reveals that the dispersion coefficient increases with increase in electric number but decreases with increase in couple stress parameter and chemical reaction rate.

References

Effect of Reaction Rate on Dispersion of Atmospheric Aerosols in the Presence of Electric Field


Index Terms

Computer Science Applied Sciences

Keywords

Electrohydrodynamics Pollution Couple Stress Fluid