國立中山大學應用數學系
學術演講

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講　題：A Linear Approximation to the Poisson-Fermi Model and its Applications for Electrolyte Solutions

時　間：2018/12/13（星期四）14:10 ~ 15:00

地　點：理學院四樓理 SC 4009-1 室

茶　會：15:00 於理 SC 4010 室 (系辦公室)

摘 要

Thermodynamic models for aqueous electrolyte solutions plays a crucial role over wide fields of chemical, biological sciences and engineering. The Debye-Hückel theory proposed the Debye–Hückel limiting law/equation to describe the deviation of the chemical potential of the ion from ideality, namely the activity coefficient. In this talk, some relative works and history of electrolyte solutions are briefly described. Based on an analysis of the Poisson-Fermi (PF) Model, we derived a generalized Debye-Hückel equation to account for the steric (finite size), correlation, and polarization effects of ions and solvent molecules such as water in aqueous electrolyte solutions. The unique solution is typically presented for a linear PF Model with spherical symmetric domain. Finally, some numerical evaluations for the experimental data are given to illustrate our theoretical results.

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