Preface

In Volume 2 of the monograph entitled Kinetic Theory of Nonequilibrium Ensembles, Irreversible Thermodynamics, and Hydrodynamics, relativistic theories are presented for dilute monatomic gases and photons by using covariant kinetic equations. Kinetic equations employed are covariant versions of Boltzmann kinetic equations and the Nordholm–Uehling–Uhlenbeck quantum kinetic equations applied to a mixture of material gases and photon gases. By using the aforementioned kinetic equations, we develop kinetic theories for relativistic irreversible thermodynamics and hydrodynamics in a parallel manner to the nonrelativistic theories we have presented in Volume 1 of the monograph. The materials were based on the manuscripts written in collaboration with Dr. Kefei Mao many years ago, which also made up a part of his Ph.D. dissertation, McGill University, Montreal, 1993. I would like to thank Dr. K. Mao for collaboration.

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Byung Chan Eu
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