Preface

This book represents the second volume in the author's theoretical exploration of the fundamental interaction between mass and electromagnetic energy. At the heart of this research lies the proposition that mass arises from the localization of photons—specifically through the self-binding of rotating photon pairs. This framework reimagines mass not as an intrinsic property but as an emergent phenomenon grounded in electrodynamic structure.

A key premise of the theory is that the speed of light is not merely a fixed universal limit, but a result of deeper interactions—specifically, the opposing flow and scattering effects within a vacuum medium. This vacuum is modeled as a dynamic density field, shaped by the Feynman action flow density generated by the photons comprising all mass particles in the universe. Within this view, the vacuum is not empty but an active participant in energy-mass behavior.

The first book was a compilation of early-stage papers, capturing the development of these ideas from their inception. It began with a radical departure from conventional physics—intentionally setting aside traditional constructs such as force, gravitational potential and even quantum wavefunctions. Instead, the approach focused on the use of fundamental constants alone, seeking to uncover what could be derived from first principles. Although this led to countless false starts, certain recurring relationships began to stand out—among the earliest being an intriguing link between the fine-structure constant (α) and the gravitational constant (G), hinting at a deeper unity between electromagnetic and gravitational phenomena.

The Feynman action integral, central to quantum electrodynamics, soon emerged as a promising formal tool. Yet it wasn't until more recently that its full relevance became apparent—particularly the interpretation of its flow density as distinct from the probabilistic interpretation of the wavefunction in standard quantum mechanics. This contrast opened new avenues for understanding the mechanisms by which particle states and masses arise.

This second volume is more focused and interpretive in nature. It aims to clarify how the Delta-C Mechanics framework intersects with and offers fresh insight into well-established but often poorly understood concepts in classical and relativistic mechanics—such as the Lorentz transformation, the origin of centrifugal force, the invariance of the speed of light, and the quantized values of particle mass and energy states.

This book is also an ongoing development. The chronology goes from last to first, as the consilience of atomic and nuclear structure is better understood.

Together, these two books represent the culmination of a lifelong quest to better understand the underlying structure of the physical world. The author's academic journey began at Western Kentucky University in 1961 and concluded with the completion of the academic requirements for a Ph.D. in Physics at Auburn University in 1969. The final dissertation, though never formally submitted, focused on the interaction of shock waves in plasma

This work is offered in the spirit of inquiry, with the hope that it may inspire further investigation into the unification of mass, light, and vacuum structure—and perhaps contribute, in some small way, to the ongoing search for a more complete physical theory.