

PREFACE

There are many books in the bibliography related to vertical transportation engineering. Many of them are devoted to classical aspects of elevators, such as machinery, mechanics or electronics. However, reference books on new materials and technologies in vertical transportation are very unusual.

Throughout my professional life, I have learned that new technologies are in all the cases associated to new materials in general, and in vertical transportation, in particular. This is the reason to present this book. There is a gap between classical engineering content books and texts that refer to the application of new concepts for elevators and escalators. Ten years ago, this gap was not perceptible, but by the '90s, the implementation of high-tech materials and innovative technologies has become so extensive that a book on this matter is a clear need.

Among the large list of new technologies and materials currently or potentially applied to the vertical transportation world, I have selected five key technologies: permanent magnet synchronous motors, lineal induction machines, self-propelled systems, infrared and fiber optic technologies, and artificial intelligence systems. Five is also the number of materials that are the object of study of this book: kevlar, fiberglass, thermoplastics, carbon fibers and nanomaterials.

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