**Applied Acoustics: Concepts, Absorbers, and Silencers for Acoustical Comfort and Noise Control: Alternative Solutions – Innovative Tools – Practical Examples**

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Published for the first time in English, this book is a valuable and practical reference for experienced professionals working in the fields of architectural acoustics and noise control. The format follows from the author's many years of teaching and working in the field of acoustics and should be a first reference for anyone working on similar projects. Not highly mathematical, the book nevertheless provides very useful equations and a wealth of practical description and background information for solutions to problems in room acoustics, silencer design, and acoustic test facilities using innovative absorber designs.

In the Forward, the author presents what from his experience has been a successful model for bringing innovative products to market in cooperation with marketing and manufacturing companies. This is in contrast to traditional models where research and development is done first and then published, or just handed off piecemeal to industry. This traditional approach to developing new products is problematic in that it often ends prematurely when the research is done, and results are published and then all but forgotten. Consequently, innovative ideas are not developed into a product or if used are applied incorrectly with inevitable field problems. The better approach is to first identify the problems that call for innovative solutions, develop and test prototypes for these solutions and then formulate a cooperative agreement with industry whereby researchers and industry work together through the production and marketing phase to fine tune the final solutions.

After the introductory first chapter, the author sets the "acoustical stage" in the second chapter by describing the "low frequency problem" and showing why the ubiquitous dBA, an approximation to loudness, is not an adequate metric for many problems. Working with only dBA criteria does not give adequate attention to low frequency issues such as booming modes in rooms. Solutions to the low frequency problem go well beyond just adding conventional fibrous and foam sound absorbers of limited thickness. The need for better low frequency absorption is then discussed in chapters 5 through 7 where panel absorbers, Helmholtz resonators, interference resonators (quarter-wave, half-wave and tubular resonators) and absorbers with active components are presented. Chapter 8 deals with active absorbers. Chapter 9 is devoted entirely to micro-perforated absorbers, useful when fibrous or foam absorbers cannot be tolerated. Chapter 10 shows how absorbers can be integrated into architectural design in innovative ways without appearing obvious. Chapter 11 discusses first a comprehensive presentation of room acoustics that presents objective criteria for room acoustic quality and speech intelligibility. The remainder of the chapter has many examples for open office plans, classrooms, music rooms, churches, theatres, dining rooms, gyms and acoustic measurement rooms. The remaining chapters 12 and 13 address the design of anechoic test facilities and silencers in flow ducts.

This book is not for those wanting an introduction to architectural acoustics and noise control but rather is written for the experienced practitioner with a solid background in engineering and architectural acoustics. Some readers may find the concepts and explanations densely packed with information and difficult to wade through but may still benefit by reading the practical examples. Nevertheless, this is a long needed reference that goes well beyond handbooks that are merely a summary of equations, lacking examples and practical application of the theory. Thus, it is highly recommended.

*Daniel J. Kato*
*San Jose, CA*
*danieljkato@msn.com*