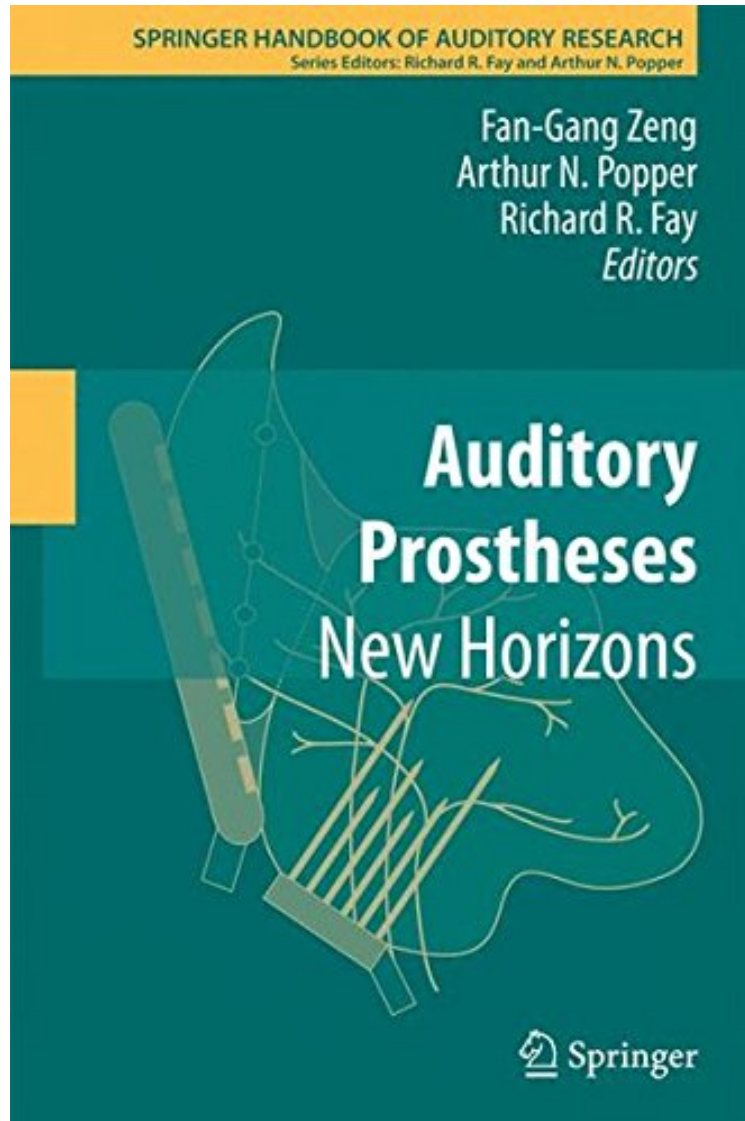


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Grenier Auditory Prostheses Springer Verlag Joseph J Grenier MD PhD This book is devoted to machine auditory implants at the midbrain, brain stem, cochlear, and cochlear nuclei targets. Multiple electrode arrays are mapped according to frequency, pitch, and other psychophysical parameters. The success of the book is primarily in the neurophysiology and bioengineering perspectives devoted in current and past. I recommend this work for neurophysiologists, bioengineers, and audiologists at the student, fellow and very experienced audiences.

Cochlear implants are currently the standard treatment for profound sensorineural hearing loss. In the last decade, advances in auditory science and technology have not only greatly expanded the utility of electric stimulation to other parts of the auditory nervous system in addition to the cochlea, but have also demonstrated drastic changes in the brain in responses to electric stimulation, including changes in language development and music perception. Volume 20 of SHAR focused on basic science and technology underlying the cochlear implant. However, due to the newness of the ideas and technology, the volume did not cover any emerging applications such as bilateral cochlear implants, combined acoustic-electric stimulation, and other types of auditory prostheses, nor did it review brain plasticity in responses to electric stimulation and its perceptual and language consequences. This proposed volume takes off from Volume 20, and expands the examination of implants into new and highly exciting areas. This edited book starts with an overview and introduction by Dr. Fan-Gang Zeng. Chapters 2-9 cover technological development and the advances in treating the full spectrum of ear disorders in the last ten years. Chapters 10-15 discuss brain responses to electric stimulation and their perceptual impact. This volume is particularly exciting because there have been quantum leap from the traditional technology discussed in Volume 20. Thus, this volume is timely and will be of real importance to the SHAR audience.

From the book reviews: This book is devoted to machine auditory implants at the midbrain, brain stem, cochlear, and cochlear nuclei targets. I recommend this work for neurophysiologists, bioengineers, and audiologists at the student, fellow and very experienced audiences. (Joseph J. Grenier, .com, November, 2014) Each chapter provides insight into an application of an auditory prosthetic device. It is written for individuals interested in hearing research, particularly graduate students and clinical investigators. written by an expert in that field. This volume expands on one published seven years ago, covering advances in hearing research and the use of auditory prosthetic devices that have occurred since then. It provides evidence-based data, making it very useful to researchers in the hearing sciences. (Inna Athar Husain, Doodys Service, January, 2012) From the Back Cover Cochlear implants are currently the standard treatment for profound sensorineural hearing loss. In the last decade, advances in auditory science and technology have not only greatly expanded the utility of electric stimulation to other parts of the auditory nervous system in addition to the cochlea, but have also demonstrated drastic changes in the brain in responses to electric stimulation, including changes in language development and music perception. Auditory Prostheses: New Horizons examines a range of current issues that concern complex processing of sounds by the prosthetic device users. Advances in Auditory Prostheses - Fan-Gang Zeng. Bilateral Cochlear Implants - Richard van Hoesel Combining Acoustic and Electric Hearing - Christopher Turner and Bruce Gantz Implantable Hearing Devices for Conductive and Sensorineural Hearing Impairment - Ad Snik Vestibular Implant - Justin S. Golub, James O. Phillips, and Jay T. Rubinstein Optical Stimulation of the Auditory Nerve - Claus-Peter Richter and Angella Izzo Matic A Penetrating Auditory-Nerve Array for Auditory Prosthesis - John C. Middlebrooks and Russell L. Snyder Cochlear Nucleus Auditory Prostheses - Douglas. B. McCreery, and Steven. R. Otto Midbrain Auditory Prostheses - Hubert H. Lim, Mino Lenarz, and Thomas Lenarz Central Auditory System Development and Plasticity after Cochlear Implantation - Anu Sharma and Michael Dorman Auditory Training for Cochlear Implant Patients - Qian-Jie Fu and John J. Galvin III Spoken and Written Communication Development Following Pediatric Cochlear Implantation - Sophie E. Ambrose, Dianne Hammes-Ganguly, and Laurie S. Eisenberg Music Perception - Hugh McDermott Tonal Languages and Cochlear Implants - Li Xu and Ning Zhou Multisensory processing in cochlear implant listeners - Pascal Barone and Olivier Deguine About the Editors Fan-Gang Zeng is Professor and Research Director in the Department of Otolaryngology - Head Neck Surgery, University of California, Irvine. Arthur N. Popper is Professor in the Department of Biology and Co-Director of the Center for Comparative and Evolutionary Biology of Hearing at the University of Maryland, College Park. Richard R. Fay is Distinguished Research Professor of Psychology at Loyola University Chicago. About the Series: The Springer Handbook of Auditory Research presents a series of synthetic reviews of fundamental topics dealing with auditory systems. Each volume is independent and authoritative; taken as a set, this series is the definitive resource in the field.