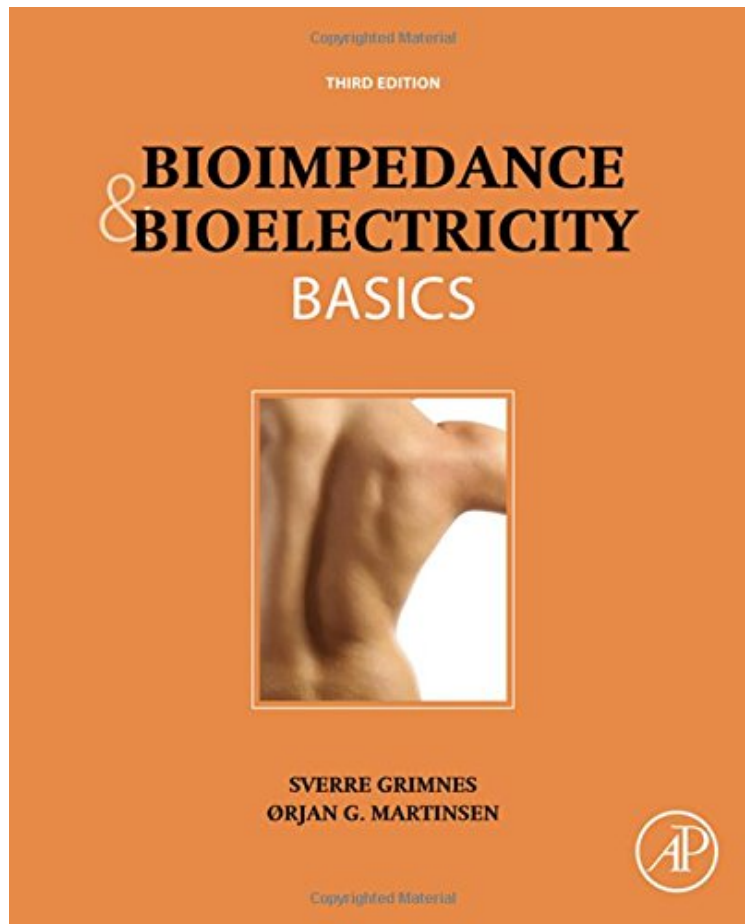


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## Bioimpedance and Bioelectricity Basics, Third Edition

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Bioimpedance and Bioelectricity Basics, 3rd Edition paves an easier and more efficient way for people seeking basic knowledge about this discipline. This book's focus is on systems with galvanic contact with tissue, with specific detail on the geometry of the measuring system. Both authors are internationally recognized experts in the field. The highly effective, easily followed organization of the second edition has been retained, with a new discussion of state-of-the-art advances in data analysis, modelling, endogenic sources, tissue electrical properties, electrodes, instrumentation and measurements. This book provides the basic knowledge of electrochemistry, electronic engineering, physics, physiology, mathematics, and model thinking that is needed to understand this key area in biomedicine and

biophysics. Covers tissue immittance from the ground up in an intuitive manner, supported with figures and examples. New chapters on electrodes and statistical analysis. Discusses in detail dielectric and electrochemical aspects, geometry and instrumentation as well as electrical engineering concepts of network theory, providing a cross-disciplinary resource for engineers, life scientists, and physicists.

**About the Author** Sverre Grimnes graduated in 1963 as an electronic engineer from the Technical University of Trondheim. He spent four years at SI, Oslo followed by a year at Sorbonne in Paris before moving to the University of Oslo's Department of Chemistry. From 1973-2001 he was Head of the Department of Biomedical and Clinical Engineering at Rikshospitalet and since 1984 has also been Professor at the Department of Physics at the University of Oslo. His research interests include electrical and physiological properties of human skin, patient electrical safety, and bioimpedance basic theory and instrumentation. Professor Grimnes authored a hugely successful Norwegian book series on Medical Technology and has been awarded the Herman P Schwan Award and the Kings Gold Medal of Merit. rjan G. Martinsen received his M.Sc. and PhD in electronic engineering from the Department of Physics at the University of Oslo, with both of his theses focusing on the electrical properties of human skin. Since completing his PhD in 1995, Martinsen has held a permanent position in the same department and currently leads the electronics research section and is Coordinator of the Oslo Bioimpedance Group. As well as his work at the university, Martinsen also holds a part time research position in the Department of Clinical and Biomedical Engineering at Oslo University Hospital, his main research interest being electrical bioimpedance. With Sverre Grimnes he is the founding editor-in-chief of the Journal of Electrical Bioimpedance ([www.bioimpedance.net](http://www.bioimpedance.net)).