Introduction

The Second International Symposium on the Corrosion and Degradation of Implant Materials was held in May 1983 in Louisville, Kentucky. The symposium was sponsored by the ASTM Joint F-4/G-1 Section on the Corrosion of Implant Materials. Members of this group come from ASTM Committee F-4 on Medical and Surgical Materials and Devices and ASTM Committee G-1 on Corrosion of Metals. This was the second symposium on the topic sponsored by this joint group and was a five-year follow-up of the original meeting. The first meeting, held in Kansas City, Kansas, in 1978, resulted in Corrosion and Degradation of Implant Materials, ASTM STP 684. This is an excellent and much used book, but due to the growth in the field and advances in technology since 1978, a re-examination of the theme was considered necessary. At a meeting of the ASTM Joint F-4/G-1 Section on Corrosion of Implant Materials in 1981, planning began that resulted in a successful update to the original symposium.

The introduction to ASTM STP 684 refers to man’s efforts to repair the body over the centuries and the role of physicians, scientists, and engineers in making vast progress in the synthetic implant field. More history mentioned in the introduction to Titanium Alloys in Surgical Implants, ASTM STP 796, cites the importance of antiseptic techniques in surgery and indicates the level of demand on the implant material after these techniques extended the life of implants by reducing infection and other complications. Today, we are in an age of high technology where metal alloys, polymers, ceramics, and other materials are being modified and new materials are being developed. As these creations and innovations occur, it is important to regularly assess the biocompatibility and durability of the materials in the human body. As material technology and design improvements extend the life and success of medical implants, these basic questions become more important than ever.

This Second International Symposium was intended to cover a number of different implant materials as well as topics dealing with standards, retrieval analysis, and legal considerations. The papers in this book represent a contribution from the authors, reviewers, ASTM Staff, and the editors. It is hoped
that the papers will be useful in advancing the science of biomaterials and in providing better implant materials for surgical use.

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