

Preface

Explosive pulsed power (EPP) is an outgrowth of the nuclear weapon programs in the United States, United Kingdom and Soviet Union. Its history can be traced back to the early 1950s and involves several of the great scientists of the time. The development of EPP has been cyclic with the most recent upturn starting in 1998 with a university consortium funded by the US Air Force of Scientific Research and led by Texas Tech University. Since 1998, there have been many advances in this technology in the U.S., which are reported on in this book. This book only reports on advances in the U.S., since these are more familiar to the authors. Advances continue to be made in other countries such as China, Germany, Russia, South Korea, Sweden and others.

As in any endeavor, there are many people who make valuable contributions. First and foremost is the late C.M. ‘Max’ Fowler, who pioneered the work on EPP in the U.S. and served as teacher to two of the authors. Max also co-authored Chapter 5 and provided several historical photos and drawings. Others include Wes Hackenberger and Ed Alberta at TRS Technologies, who provided valuable inputs to the chapters on ferroelectric materials, David Hemmert at HEM Technologies, who provided valuable insights on shock wave sources, and Frank Rose at Radiance Technologies, who provided insights into the history of ferroelectric generators, Yaroslav Tkach at Gomez Research Associates, who helped model the FEGs, Kris Kristiansen, Andreas Neuber, Jim Dickens, Thomas Holt, Andrew Young, Moe Elsayed, and others at Texas Tech University, who helped revive and maintain EPP starting in the late 1990s, and Randy Curry and Kevin O’Connor at the University of Missouri in Columbia, who made advances in EPP power conditioning. We would also like to acknowledge Robert Barker, who, as the Program Manager for Plasma Physics at the Air Force

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