

1. Record Nr.	UNINA9910637706103321
Autore	Bokros Jack
Titolo	Heart of carbon : the story behind the pursuit of the perfect mechanical heart valve // Jack Bokros
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	9783031179334 9783031179327
Descrizione fisica	1 online resource (291 pages)
Disciplina	617.4120592
Soggetti	Heart valve prosthesis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Foreword by John D. Puskas, MD -- Foreword by Mervyn Williams -- Acknowledgments -- Contents -- Abbreviations -- Contents -- Contents -- Chapter 1: Overview -- Chapter 2: Nuclear Foundations -- Grappling with a Serious Problem -- A Brush with the Not Discovered Here Mentality -- Another Rung on the Academic Ladder -- More Experience with Reactors -- The Final Rung of the Academic Ladder -- Diving Back into Industry -- References -- Chapter 3: Origin and Characterization of Medical Carbons -- Black Box Analysis -- New Directions Based on New Evidence -- References -- Chapter 4: Gott's Early Experience: A Lesson in Serendipity -- The Artificial Heart Program -- The Gordon Conference -- General Atomic Enters the World of the Artificial Heart Program -- Following the Evidence Where It Leads -- Where the Studies Led -- References -- Chapter 5: First Carbon Heart Valve Replacement -- Navigating Unforeseen Complications -- Manufacturing the First Hollow Balls -- The Valves that Took a Detour -- DeBakey-Surgitool Valves In Vivo -- References -- Chapter 6: First All-Carbon Mitral Valve Replacement -- The Beall Valves Advance the State of the Art -- A Major Wake-Up Call -- One Patient's Three-Decade Track Record -- At the Dawn of the Industry -- References -- Chapter 7: Monoleaflet Tilting Disc Valves -- An Unforeseen New Problem Arises -- Business Complexities Take Center Stage -- Large Black Smudge on Laboratory

Exterior Wall -- An Invited Visit to the Italian Company Facility -- Marshall Kriesel and Medical Incorporated -- Shiley Laboratories Develops Its Valve Designs -- Medical Inc. Designs an Improved Valve -- Medical Incorporated's Omnicarbon Valve -- Shiley's Struggles with Strut Failure -- The Key to the Future -- References -- Chapter 8: First Bileaflet Valve: St. Jude Medical Inc. Start-Up -- Accommodating Demands for an Inspection. Reference -- Chapter 9: General Atomic Inc. Medical Products Division Sold to Intermedics Inc. -- Chapter 10: CarboMedics Inc. Gets Acquainted with Intermedics Inc. -- Chapter 11: CarboMedics Inc. Moves to Austin Texas -- The New Facility in Austin -- New Facility, New Problems -- Reference -- Chapter 12: The Hemex Inc. Venture -- The Dawn of Hemex, Inc. -- Reaching beyond Carbon Heart Valve Replacement -- References -- Chapter 13: The St. Jude Medical Inc. Litigation -- Dirty Tricks That Backfired -- Reference -- Chapter 14: Broadening the Horizon -- References -- Chapter 15: Two Valves for China -- "Call Me Ned" -- Rollie Siegel Joins CarboMedics, Inc. -- First Steps in China -- Bringing Carbon to Beijing -- First Human Implant of the CarboMedics, Inc. Replacement Valve -- References -- Chapter 16: Negotiating Chinese Joint Venture -- Chapter 17: European Company Buys Intermedics Inc. -- References -- Chapter 18: Medtronic Inc. Project -- A Key Technical Breakthrough -- The Accuntius/Wilde Patent Makes a New Pure Carbon Valve -- References -- Chapter 19: Medical Carbon Research Institute LLC/On-X Life Technologies Inc. -- Visit to a Vineyard -- Chapter 20: Valve Design -- A Flare for Valve Design -- High-Impact Versus Low-Impact Valve Closure -- References -- Chapter 21: Clinical Trials -- A Pause to Reflect Important Events -- References -- Chapter 22: Design Validation -- Leonard da Vinci Lays Down the Law -- "The Thrill Is Gone!" -- References -- Chapter 23: Studies Concurrent with FDA Trials -- Mervyn Williams and the South African Study -- Belgium Reports In -- Putting the Pieces All Together -- Promoting the On-X Valve -- References -- Chapter 24: Understanding Cardiac Blood Flow -- Gerald Buckberg and the Advance of Heart Science -- References -- Chapter 25: Investigating the Viability of Bioprostheses -- Reference. Chapter 26: On-X Valve Implantability -- What's in a Shape? -- References -- Chapter 27: Selling the On-X Valve -- Encountering Unexpected Resistance -- Chapter 28: The Leonardo da Vinci Video -- Marketing Philosophies in Conflict -- References -- Chapter 29: Gerald Buckberg Joins the Video Project -- Misconceptions That Could Have Been Prevented -- Big News from the FDA -- References -- Chapter 30: A Surprise from Northwestern University -- The Video Continues to Evolve -- Too Little Too Late? -- The Video and the In-House Critics -- References -- Chapter 31: CryoLife Inc. Buys On-X Life Technologies Inc. -- Chapter 32: Mervyn Williams's South African Trial of the On-X Valve -- Introduction -- Surgical Procedure -- Results -- Discussion -- Conclusion -- References -- Chapter 33: Summary and Reflections -- Appendix -- Summary and Conclusions -- Reliability of Pyrolytic Carbon for Heart Valve Application -- Fatigue Crack Growth Threshold -- Does Pyrolytic Carbon Fatigue At All? -- Probability of Failure and Weibull Statistics -- Micro Cracks -- Microstructure of Pyrolytic Carbon -- Conclusions -- References -- Index.
