

Energy-based Treatment of Tissue and Assessment IX

Thomas P. Ryan
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Introduction

Welcome to the proceedings for the *Energy-Based Treatment of Tissue and Assessment IX*. This is the 19th year the conference has been included at Photonics West. Our first session in 1998 was entitled: *Surgical Applications of Energy*.

This year featured a wide variety of papers covering energy-based devices and techniques in medicine. Thirty-four papers were presented, and the publications associated with those talks comprise another comprehensive SPIE proceedings this year. We had a number of cutting-edge papers covering a range of topics: nanoparticles and the effects on immunology and cancer; thermal accelerant and theranostic platforms (both are novel for this conference); nanosecond pulsed electric fields; plasma medicine; low level energy treatment with ultrasound or light; and surgical tools for sterilization, laser scalpels, and laparoscopic dissection. Thermal therapy included microwave, ultrasound, and innovative imaging for assessment. It also included surgical trainers that may have broad applications in training clinicians before using thermal treatments in many anatomical sites. Surgical vessel sealing assessment and architecture was also presented. Last, but not least, new laser technology for vision correction was presented, which could result in significant commercial development in the future. Throughout the years, we have tracked the evolution of treatment technologies, aided by image guidance, and driven by evidence-based medicine. I hope that these proceedings, as in the past years, provide a viable and contemporary resource that will stimulate further ideas and applications of energy-based tissue treatment and assessment technologies.

Thomas P. Ryan

