Resonetics granted patent for drilling micro holes in balloons and other thin polymer films

Nashua, N.H., Jul 5, 2017—The U.S. patent office recently granted Resonetics a new patent (U.S. 9,694,446, 04 Jul 2017) “Wall thickness compensation during laser orifice drilling.” Due to the growing need for less invasive devices and localized drug delivery, lasers are being used extensively to drill very fine micro holes in various two and three dimensional formats. Such drilling is sensitive to variation in wall thickness, which can be quite pronounced, especially in advanced balloon technology. Maintaining consistency and adhering to product specifications is critical to product performance, patient safety and the lowest possible manufacturing costs.

Resonetics has engineered several methodologies to address this challenge resulting in this latest patent. Pre-determining/mapping the wall-thickness profile of a balloon combined with in situ, real time process monitoring allows for minute adjustments to the laser ablation beam ensuring a consistent result regardless of variation in the polymer material. Kevin Hartke, Chief Technology Officer commented, “As Resonetics continues to advance laser micro manufacturing for life sciences the development of in-process monitoring technologies are vital. The resolution of our process often exceeds the tolerances of materials being processed. For laser orifice drilling of balloons, we have circumvented this challenge through the deployment of in-situ wall thickness compensation, which provides our customer with a consistent geometry regardless of the variation in material thickness.”

About Resonetics

Resonetics is the leader in laser micro manufacturing for life sciences. Core competencies are laser ablating, cutting, drilling and welding. Resonetics’ expertise started in polymer processing and has expanded to metals and glass. Our team makes millions of life-changing device components a year. Our passion for laser technology complements our customers’ passion for improving and saving lives. Together, we collaborate to solve complex challenges and develop the next generation of life science devices. Locations include Boston, Costa Rica, Dayton, Minneapolis, and San Diego. Resonetics is ISO 13485:2003 Registered. For more information contact: sales@resonetics.com, or visit Resonetics.com