



PRESS RELEASE

FOR IMMEDIATE RELEASE
August 30, 2018
Pictures available on request.

Contact: Julie Prev y
Marketing Manager
jprevey@lambdatechs.com

Lambda Achieves 500x Fatigue Life Increase Extending the Life of Gas Turbine Bolts with Engineered Compression

Cincinnati, OH – Lambda Technologies has developed a solution to extend the fatigue life of gas turbine bolts. Using low plasticity burnishing (LPB[®]), Lambda engineers apply a deep, stable layer of engineered residual compression to regions of the bolts that are vulnerable to fretting fatigue. By putting the edge of contact region in compression much deeper than the shallow shear cracks formed by fretting, fatigue cracks cannot propagate through the compression and the chance of fracture is eliminated. Even when applied to a bolt with existing fretting fatigue damage, LPB provides better than 500x life improvement.

Considered the backbone of power generation, ground based turbines produce over 80% of the world’s electricity. Turbine bolts, or tie rods, can be susceptible to fretting fatigue at the edge contacts between the turbine rotors and the tie rod landings. To address this, plant operators perform frequent inspections of the bolts, replacing any that have signs of damage. This requires a substantial amount of down time that can severely impact both operating efficiency and the cost of power generation. With LPB, these tie rod bolts can remain in service for the entire life of the turbine. At the date of this printing, LPB has saved operators approximately \$16 million in replaced bolt sets, and approximately \$40 million total in improved operating efficiency.

“As power requirements continue to rise, this cost-effective method of extending the life of tie rod bolts will be an invaluable tool to reduce operational costs,” says Dr. Jayaraman, Director of Materials Research for Lambda. Because cracks cannot propagate from minor damage that is shallower than the LPB compressive layer, inspection can be simplified and the frequency reduced. With LPB applied to the high stress locations of critical components, during manufacture or overhaul, operators can be confident that turbine components will operate reliably with reduced operating costs.

Lambda Technologies is an innovative company incorporating a premier materials research laboratory with a world-class engineering and production enterprise dedicated to the development and optimization of surface treatments to improve component performance. For additional information on Lambda Technologies or the LPB process, contact Julie Prev y at (513) 561-0883 or visit www.lambdatechs.com.