



IEEE LEOS Los Angeles Chapter Quarterly Seminar

TOP FIVE MOTION AND VIBRATION APPLICATION MISTAKES

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5:45 p.m. – 7:30 p.m.

Refreshments will be served

Abstract: As technology advances toward smaller features sizes, more precise dimensional requirements and faster time domains the need to incorporate motorized positioning and improve vibration control increases. Humans have limited dexterity to make minute adjustments using traditional screw driven products, and the simple act of touching an optical mount induces motion and vibration into sensitive processes. Tests have shown that humans typically have no better than 1 degree adjustment sensitivity in their fingers which translates to a 705nm linear translation on a 100tpi screw. This type of screw, mounted in a 1" mirror mount, would typically provide 28urad or 5.8arc seconds of angular sensitivity. The use of precision motorized devices and vibration isolation equipment to overcome these human limitations has been increasing over the past 5 years as the value (benefit-cost) of these components has increased. As the integration of these devices continues to increase, it is important for users to become educated on the best methods, products, and techniques to assure their success. Newport has over 30 years of experience in advancing our customers' technologies and discoveries and over that time, we have seen many successes and mistakes made by our customers. To continue with our support of the scientific community, we will be presenting our experience in the top five common mistakes to avoid when integrating motion and vibration control into your applications. This list is of course not all inclusive, but attending to these common mistakes will substantially increase your success at advancing your technology and research.

Biography: Jim Fisher is the Director of Motion and Vibration Control Product Marketing at Newport Corporation. He has served in various roles in his seven years at Newport including Applications Engineering, Engineering Management, and Sales and Marketing primarily focused on motion control products for research and aerospace customers. Previous to Newport, Jim developed vehicle suspension components for the automotive industry and was nominated for several Henry Ford Design Awards. He holds a B.S. in Mechanical Engineering from the University of Illinois-Urbana and an MBA from the University of Southern California.

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