

Monitoring Vacuum Quality Using a Residual Gas Analyzer

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The Very Large Optical Coater (VLOC), which is currently in development at Lawrence Livermore National Labs, has stringent requirements that necessitate the use of high vacuum systems. The system uses a Residual Gas Analyzer (RGA) to detect and identify any remaining gases. A series of tests were conducted using known “contaminants” to determine the ability of the RGA in detecting leaks, contamination, or otherwise unsuitable operating conditions. The “contaminants” included materials such as O-Rings, wax used to seal joints, and oily fingerprints from dirty hands. Significant changes in data were recorded and compared to a previously obtained baseline reading. The overall goal of this project was to become familiar with the theory and operations of an RGA in order to build a solid foundation for the VLOC project.



Julio Barbosa finished his last year at Hartnell Community College in Salinas, California. He will be transferring to Cal Poly, San Luis Obispo in the fall majoring in Civil Engineering. He was a member of the Physics club at Hartnell and enjoys working with various physics projects that can be used as demonstrations. Julio is the first in his family to attend college and hopes to set a good example for his brothers to follow.