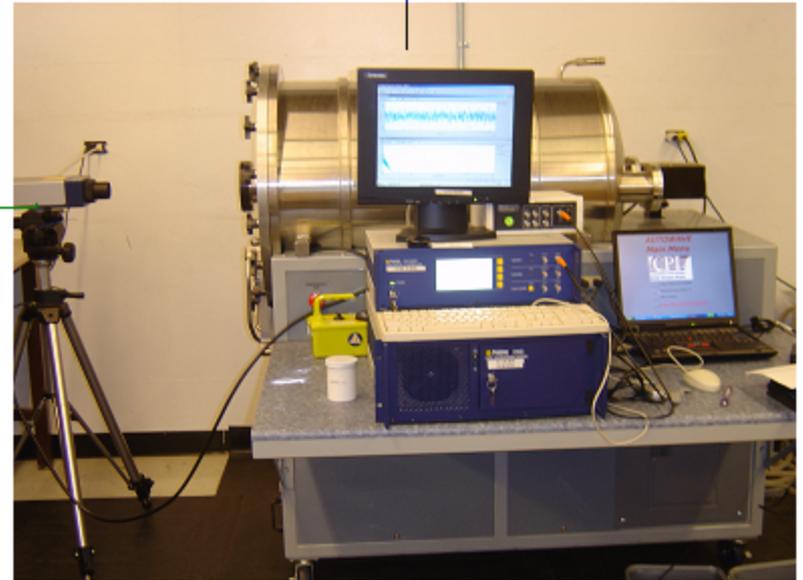


ACQUISITION/DEVELOPMENT OF EQUIPMENT FOR PROCESSING AND CHARACTERIZATION OF FUNCTIONALLY GRADED MATERIALS

**Eugene Olevsky and Ronald Kline, San Diego State University
DMR-0315290**

The project is focused on the development of the innovative experimental device and technique for a comprehensive integrated and comparative examination of both conventional and microwave sintering kinetics (including shrinkage and surface area reduction) and damage detection. The developed equipment enables *in-situ* dilatometry and ultrasonic testing during microwave sintering. The developed experimental approach renders advanced processing control, which is important in the fabrication of functionally-graded powder composites.



Microwave Sintering System VIS-300-0a is combined with the OFV Modular Laser Vibrometer for unique measurements of microwave sintering kinetics

ACQUISITION/DEVELOPMENT OF EQUIPMENT FOR PROCESSING AND CHARACTERIZATION OF FUNCTIONALLY GRADED MATERIALS

**Eugene Olevsky and Ronald Kline, San Diego State University
DMR-0315290**

The project contributes to the development of the Joint Doctoral Program between San Diego State University and University of California, San Diego (two joint Ph.D. students - are involved in the project).

The acquired equipment contributes to the research programs of multiple SDSU faculty members. The microwave sintering furnace enables sintering under protective atmospheres within temperature ranges which are not available in using any other equipment of the SDSU College of Engineering. The microwave furnace has been already successfully employed for high-temperature sintering of ceramic functionally-graded composites.



Joint SDSU-UCSD Ph.D. Students are conducting series of experiments on *in-situ* dilatometry of microwave sintering.