James A. Gerhardt
7065 Sycamore Road
Atascadero, CA 93422

EXPERIENCE

1983-Present	**California Polytechnic State University** **Department of Mechanical Engineering** *Research Technician & Mechanical/ Electrical Equipment Technician III* • Design, manufacture, instrument and test unique, specialized research equipment • Design manufacture, repair and maintain new and existing mechanical engineering laboratory equipment • Safety officer, Department of Mechanical Engineering	San Luis Obispo, California
2005-Present	**Alpha Omega Engineering, Inc.** *Technical research consultant* Investigate technical matters as a technical research assistant in legal disputes involving systems, machinery, safety issues, industrial standards, etc.	San Luis Obispo, California
1982-1983	**Gerhardt Fabrication** *Owner* • Design and manufacture prototype equipment • Prototype machine work, metal fabrication, welding	San Luis Obispo, California
1978-1982	**Bob Mack Company** *Foreman* • Underground utility construction • Heavy equipment operator	San Luis Obispo, California
1976-1977	**Theodore Racing—Hong Kong** *Race mechanic* Chassis, engines, transmissions	Indianapolis, Indiana
1969-1976	**Gerhardt/Thermo King Racing** *Race mechanic* Chassis, engines, transmissions	Indianapolis, Indiana

RESEARCH PROJECTS

Date	Project	Sponsor
2013-2014	Aerodynamic flow instrumentation	Northrup Grumman Corporation
2013-2011	Fuel design for rocket motors	NASA—Dryden
2011-2013	Behavior of nitrous oxide	NASA—Dryden
2010-2011	Small engine performance testing	Exponent Inc.
2009-2011	Reusable rocket motor	NASA—Dryden
2009-2010	Rayleigh flow experiment	NASA—Dryden

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RESEARCH PROJECTS (CONTINUED)

Date	Project	Sponsor
2008-2010	Cal Poly Wind Power Center	Office of Naval Research
2008-2009	Development of hybrid rocket motor	NASA—Dryden
2005-2008	Vectored Annular Aero-spike nozzle	NASA—Dryden
2004-2006	Develop rocket motor facility	NASA—Dryden
1995-1999	Cal Poly graduate research	NASA—Dryden
1994-1995	Evaluate dual-nozzle/exhaust-steam impingement	NASA—Dryden
1994-1995	Sea-water desalinization	AquaGen Technologies
1992-1995	Evaluate single/double thrust vector nozzle	NASA—Dryden
1991-1994	Evaluate dual-flow thrust vectoring	NASA—Dryden
1989-1990	Closed-loop diesel fuel injection	National Science Foundation

PATENTS

These patents were awarded to Cal Poly with me and others listed as inventors.

1 Sept 2010	System, method and apparatus for cooling rocket motor components using a saturated liquid-vapor coolant mixture	U.S. patent #8,776,494
7 March 2000	Nozzle flow thrust vector management	U.S. patent #6,032,545

EDUCATION

1971-1973	**California State University—Fresno** Course of study: Mechanical Engineering	Fresno, California
1967-1971	**Apprenticeship** Metal fabrication, machining, welding	Fresno, California

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