

Dr. Jean N. Koster

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Professor of Aerospace Engineering Sciences Systems Engineering; Materials Science

Diplom-Engineer (BS in Mech. Engineering), 1976; **Doktor-Engineer** (Ph.D. in ME), 1980 – Univ. of Karlsruhe (Germany)

Research & Development:

Research in fluid mechanics, heat transfer, and processing of electronic and structural materials. Recent research in electric and hybrid energy systems for aircraft and automobiles. Total funding about \$3.2M. Current research grant from NASA-Aeronautics on aeronautics workforce development in collaboration with MIT and USNA.

Published 100 refereed papers and three books, one video course and 2 invited book contributions.

Developed spaceflight hardware and led experiments (PI) on board of the Space Shuttle Columbia, STS 65.

Pioneered new experimental technologies: radiography for density and concentration measurements in materials processing; particle image velocimetry; high-speed laser Doppler velocimetry; holographic real-time interferometry; differential interferometry.

Two patents: U.S. Provisional Patent Application No. 61/867,927; "Hybrid Transmission using Planetary Gear Set for Multiple Sources of Torque for Propeller-Driven Vehicles"; Filing Date: 20 August 2013 (5 students as co-inventors)

U.S. Patent Application Publication Pub.No. US 2012/0329593 A1; "Hybrid Transmission using Planetary Gear Set for Multiple Sources of Torque for Vehicles"; Filing Date: 27 December 2012; (9 students as co-inventors)

Professor:

Taught at the University of Colorado at Boulder since 1987; fluid mechanics, experimental technologies, space power systems, alternative energy systems, aerospace materials, systems engineering and design.

Special achievements include the development of a hands-on curriculum for sophomore students in aerospace engineering, and a new rigorous senior design program emphasizing Systems Engineering and teamwork. JNK is Course Coordinator for Capstone Senior Design Program and ABET coordinator in the Aerospace Department. He received funding from Boeing-Phantomworks, Lockheed Martin, Ball Aerospace, United Launch Alliance (ULA), NASA Jet Propulsion Lab (JPL), NASA-MIT, Defense Intelligence Agency (DIA), Sierra Nevada Corp (SNC), Southwest Research Institute (SWRI) and local small businesses for capstone design projects. Member of the American Institute of Aeronautics and Astronautics (AIAA) Technical Committee "Green Engineering Program Committee" http://www.washingtonpost.com/opinions/break-the-link-between-terrorism-funding-and-poaching/2014/01/31/6c03780e-83b5-11e3-bbe5-6a2a3141e3a9_story.html?tid=hpModule_6c539b02-b270-11e2-bbf2-a6f9e9d79e19.

Career Overview:

- Founding member of TIGON ENERTEC Inc. and HELIOS Torque Fusion, Inc. Company designs and develops hybrid propulsion systems. Incubation funding from Renewable and Sustainable Energy Institute (RASEI) and eSpace Inc.
- University of Colorado: post-doc mechanical engineering (1985-87), Assistant/Associate/Full Professor aerospace engineering sciences (1987- present)
- NASA Lewis Research Center: post-doc, microgravity science and materials processing in space (1984-85)
- Nuclear Research Center Karlsruhe, Germany: scientist with safety program on water-cooled nuclear reactors (1982-84)
- University of Utah, Dept. of Physics: post-doc, electronic material crystal growth (1980-82)

Awards:

"Inventor of the Year 2010" award, University of Colorado Office of Technology Transfer

"Educator of the Year 2011" award, American Institute of Aeronautics and Astronautics, Rocky Mountain Section.

"Best Paper Award" *Design of a hybrid propulsion system for aircraft.* AIAA-ASM 2011-1011, Design Engineering TC

"Best Paper Award" *The Hyperion 2.0 Green Aircraft Project.* AIAA-ASM 2012-0878, Design Engineering TC

"Best Paper Award" *The Hyperion 2.1 Green Aircraft Project.* AIAA-ASM 2013-0817, Design Engineering TC

Personal:

Born in Luxembourg, 9/28/1948. Married since 1973, two children. Naturalized American Citizen.