



Name in English: Taylor Gun-Jin Wang
Name in Chinese: 王贛駿 [王贛駿]
Name in Pinyin: Wáng Gànjùn
Gender: Male
Birth Year: 1940
Birth Place: Shanghai, China
Current location: Nashville, Tennessee

Profession(s): Professor of Mechanical Engineering, Astronaut, Scientist

Education: Bachelor of Science, Physics, University of California - Los Angeles, 1967; Master of Science, Physics, University of California - Los Angeles, 1968; Ph.D., Physics (fluid mechanics and solid state physics), University of California - Los Angeles, 1971,

Awards: 2007, Asian American Engineer of the Year Award, Chinese Institute of Engineers

Contributions: Taylor Gun-Jin Wang was the first person of Chinese descent to travel in space. Born in Shanghai, he moved with his family to Taiwan in 1952 where he got his elementary and high school education. He later moved to the United States in 1963 where he went to college and eventually earned a Ph.D. in Physics in 1971. He got a job with the Jet Propulsion Laboratory (JPL) at the California Institute of Technology (CalTech) as a senior scientist in 1972 eventually becoming Program Manager for Materials Processing in Space. Dr. Wang is a leader in developing acoustic levitation as a method of containerless processing. Acoustic levitation is a method for suspending something in a given space using the intense sound waves. As microchips get smaller and smaller and run at faster and faster speeds it becomes more and more difficult to manipulate them without creating some microscopic flaw or introducing contamination that makes them useless. Containerless processing in zero gravity using sound waves offers the hope of eliminating some of these dangers and insuring continued growth in microchip processing power and the survival of this multibillion dollar industry.

Dr. Wang gained US citizenship in 1975, and published a paper on the dynamic behavior of rotating spheroids in zero gravity the next year. The paper caught the attention of NASA, and Wang was selected as Principal Investigator in 1983 for the Spacelab-3 mission, becoming one of the few scientists with no prior astronaut training to be selected before the Challenger disaster ended such recruitment in 1986. Dr. Wang flew on the Space Shuttle Challenger for seven days in 1985 where it docked with Spacelab-3 to make it operational. Dr. Wang performed experiments in drop dynamics and acoustic levitation. At mission conclusion, Dr. Wang had traveled over 2.9 million miles in 110 Earth orbits, and had logged over 168 hours in space.

In 1988 he left his post at JPL and went to Vanderbilt University. He is currently the Centennial Professor of Mechanical Engineering and Director of the Applied Physics Program and the Center for Microgravity Research at Vanderbilt University School of

Engineering in Nashville, Tennessee. He continues his research in microgravity science and applications, drop physics, physical acoustics, and biotechnology

Publications/Patents:

Dr. Wang is the inventor of the acoustic levitation and manipulation chamber for the NASA Drop Dynamics (DDM) experiments and is the author of nearly 200 articles and holds 20 U.S. patents.

A.V. Anilkumar, T.G. Wang, and I. Lacik, 'A novel reactor for making uniform capsules', *Biotechnology and Bioengineering*, 75 (5), 2001, pp. 581-589.

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Lacik, I., Anilkumar, A.V., and Wang, T.G., 'A two-step process for controlling the capsule smoothness of polyelectrolyte-based microcapsules', *Journal of Microencapsulation*, 18 (4), 2001, pp. 479-490.

A.V. Anilkumar, R.N. Grugel, J. Bhowmick, and T.G. Wang, 'Suppression of thermocapillary oscillations in sodium nitrate half-zones by high-frequency end-wall vibrations', *Journal of Crystal Growth*, 276, 2005, pp. 194-203.

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External Links:

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