

Curriculum Vita of Professor Alian Wang

Education:

- Ph.D. (1987), Université des Sciences et Techniques de Lille, France.
major: **Spectrochimie**
- M.S. (1982), Peking University, China.
major: **Spectroscopy & Quantum Electronics**
- B.S. (1975), Shandong University, China.
major: **Optics**

Professional Experiences:

- May1993 – present, **Research Professor, Research Associate Professor, Senior Research Scientist, Research Scientist, and Research Associate**, at Washington University, St. Louis, Missouri, USA.
- Jan.1992 – April1993, **Research Associate**, Laboratoire des Spectrochimie Infrarouge et Raman, and Laboratoire des Dynamique des Interactions Moléculaires, Le Centre National de la Recherche Scientifique, France.
- Sept.1975 – Jan.1992, **Associate Professor, Engineer, and Assistant Engineer**, Chinese Academy of Geological Sciences, Ministry of Land and Resources, China.
- Since 2005, **Guest Professor** of Shandong University, China
- Since 2008, **Guest Professor** of Chinese Academy of Geological Sciences, MLR, China
- Since 2010, **Guest Professor** of University of Geoscience of China

Leading and Participating in Planetary Missions and Scientific Investigation Projects of US–NASA, Europe –ESA, and China

- 2017 – 2020, **PI**, a NASA SSW (Solar System Working) project *Planetary surface mineral phase transformation induced by electrostatic discharge (ESD) in near surface atmospheric processes*
- 2013–2017, **PI**, a NASA MatISSE (Maturation of Instruments for Solar System Exploration) project, *Compact Integrated Raman Spectrometer*
- 2007–2021, **PI**, a NASA Mars Scout-MoO (Mission of Opportunity) project *Raman-LIBS investigation on ESA-ExoMars rover mission*
- 2004–2017, Payload Downlink Lead (PDL) for Pancam instrument, Lead and member of Geochemistry-Mineralogy Theme Group for US-NASA *Mars Exploration Rover mission*.
- 2011–2015, **PI** of MMRS (Mars Microbeam Raman Spectrometer), in a NASA ASTEP (Astrobiology Science and Technology for Exploring Planets) project, *life in Atacama*.
- 2011– 2012, **PI**, a NASA PME (Planetary Major Equipment) project.
- 2010–2013, **PI**, a NASA MFRP (Mars Fundamental Research Program) project.

- 2008–2011, **PI** of MMRS (Mars Microbeam Raman Spectrometer), in a NASA MIDP (Mars Instrument Development Program) project.
- 2000–2009, **PIs**, two NASA-ASTID (Astrobiology Science and Technology Instrument Development) projects, for developing WIR and BUF sensors.
- 2003–2004, **Deputy PI** of the *Mars Microbeam Raman Spectrometer* (MMRS) proposed to NASA MSL mission.
- 1997–2003, **Development Physicist** of MMRS, as part of Athena Rover Payload for 2001 & 2003 Mars Surveyor Missions (later developed into MER).
- 1996–2009, **Co-Is**, three NASA-PIDDP (Planetary Instrument Definition and Development Program), one MIDP (Mars Instrument Development Program), and two MFRP (Mars Fundamental Research Program) projects.
- 1987–1992, **PI** of a NSF (National Science Foundation) project and a MLR project in China, and Co-Is of two NSF projects in China.

Teaching and Academic Advising for graduate student, postdoctoral fellow, and Visiting Scholar:

- 2018 – 2020, **Academic adviser**, a joint-training PhD student Mr. Erbin (Irving) Shi at EPSC-WUSTL.
- 2017 – 2018, **Academic adviser**, a joint-training PhD student Mr. Jian (Merc) Chen at EPSC-WUSTL.
- 2007–2017, **Organizing** the introductions (and Teaching) of three courses: *Planetary Science*, *Planetary Spectroscopy*, *Planetary Materials* at Shandong University Weihai, China, taught by US professors.
- 2015–2016, **Academic adviser**, Visiting Scholar Dr. Z. C. Wu (Daniel) at EPSC-WUSTL.
- 2015–2016, **Academic adviser**, postdoctoral fellow Dr. X. H. Fu (Steve) at EPSC-WUSTL.
- 2011–2013, **Academic adviser**, graduate student Mr. Y. H. Zhou (Alex) at EPSC-WUSTL.
- 2011–2012, **Academic adviser**, postdoctoral fellow Dr. H. W. Du (Bruce) at EPSC-WUSTL.
- 2008–2011, **Academic adviser**, postdoctoral fellow Dr. Pablo Sobron at EPSC-WUSTL.
- 2008–2011, **Academic adviser**, a joint-training PhD student Mr. W. G. Kong (Gavin) at EPSC-WUSTL (PhD degree awarded in May 2011).
- 2006–2007, **Academic adviser**, a joint-training PhD student Mr. Z. C. Ling (Lewis) at EPSC-WUSTL (PhD degree awarded in May 2008).
- 2007–2008, **Seminar Teacher**, *Planetary Spectroscopy* at EPSC-WUSTL.
- 1988 – 1990, **Academic adviser** for two Master degree students (Wang WuYi and Gao HongLin) at Chinese Academy of Geological Sciences (CAGS), MLR, China;
- 1979 – 1980, **Teaching assistant** for General Physics at Peking University, China.

Committees & Services (Academics):

- 2018 - 2004, **Member** of GeoRaman International Scientific Advisory Committee for *International GeoRaman Conference* (held in US, Spain, Belgium, Australia, France, US, Russia)
- 2014–2016, **Chairman** of GeoRaman International Science Advisory Committee (GRISAC)
- 2012–2014, **Co-Chairman** of US Organization Committee for 11th *International GeoRaman Conference* (held June 15-19, 2014 in St. Louis)
- 2011, **Co-convener** of 2011 International Forum on Planetary Sciences and Explorations (Beijing, China)
- 2010, **Co-convener** of 2nd Yinghuo-1 Mars mission Science Data and PDS Workshop (Weihai, Chain)
- 2009, **Co-convener** of 1st Yinghuo-1 Mars mission Science Data and PDS Workshop (Weihai, Chain)
- 2009, **Co-convener** of 2009 Beijing Lunar Science Workshop (Beijing, China)
- 2007, **Co-convener** of 2007 International Summer School and Workshop on Lunar Science and Data Analysis for Planetary Missions (Weihai, China)
- 2003, **Panel reviewer**, Europe-ESA ExoMars mission, the science instruments for Pasteur rover payload.
- 1999–present, **Panel & External reviewer**, US-NSF and US-NASA's SSW, PIDDP, ASTID, MIDP, MFRP, PICASSO, MDAP, PPR, SSW, PDS, PDART, and Cosmochemistry program.
- 1993–present, **Peer reviewer**, for international science journals, *e.g.*, Applied Spectroscopy, American Mineralogists, Physics and Chemistry of Minerals, European Journal of Mineralogy, Clay Minerals, Journal of Raman Spectroscopy, ICARUS, Meteoritics & Planetary Science, J. Geophys. Res (Planet), Space Science Review, Earth and Planetary Science Letter, Optical Engineering, etc.
- Since 1984, **Peer reviewer** for China-NSF, MLR programs and Chinese science journals of spectroscopy, mineralogy, and geology.

Awards in US:

- 2017, **Fellow, The Geological Society of America**
- 2014, **NASA Group Achievement Award** for Ten Year sustained exploration and scientific discovery on the surface of Mars with the Mars Exploration Rover.
- 2010, **JESSICA magazine** "The most Successful Women 2010".
- 2008, **NASA Group Achievement Award** for the Mars Exploration Rover 3rd and 4th Extended Mission Team.
- 2007, **Award of Sir Arthur Clarke (United Kingdom)**, "Best Team Achievement" to Mars Exploration Rover team.
- 2005, **NASA Group Achievement Award** for the Mars Exploration Rover 2nd Extended Mission Team.
- 2005, **NASA Group Achievement Award** for the Mars Exploration Rover 1st Extended Mission Team.
- 2005, **NASA Group Achievement Award** for the Mars Exploration Rover Science Operations Team.
- 2004, **Science Magazine**, "2004 Science Breakthrough of the Year" to Mars Exploration Rover team.

- 2004, **Earth and Space Foundation**, “Exploration Award” to Mars Exploration Rover team.

Awards in China (before 1993):

- 1992, **Award of the Ministry of Land & Resources of China:** Database of standard Raman spectra of minerals and related inorganic crystals (PI).
1992, **Award of the Ministry of Land & Resources of China:** Experimental study of gold transportation in hydrothermal mineral deposit (co-I).
1991, **Award of the Ministry of Land & Resources of China:** Indicator minerals for diamond explorations and the database (co-I).
1985, **Award of the Ministry of Land & Resources of China:** Introducing and developing the applications of Mössbauer spectroscopic technique into the geosciences of China (co-I).
1984, **Award of the Ministry of Land & Resources of China:** Introducing and developing the applications of EMP and IR techniques into the geosciences of China (co-I).

Professional Affiliations in US:

American Geophysical Union (AGU, Planetary sciences)
Geological Society of America (GSA)
Society for Applied Spectroscopy(SAS)
Coblentz Society (Vibration Spectroscopy)

Professional Affiliations in China (before 1993)

Association of Light Scattering, Society of Physics of China
Association of Molecular Spectroscopy, Society of Chemistry of China