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**Educations:**

1. 1982/9-1986/7, BS degree, Aircraft Manufacturing Engineering, [Northwestern Polytechnical University](#), China
2. 1986/9-1989/4, MS degree, Mechanical Design Engineering, [Northwestern Polytechnical University](#), China
3. 1995/4-1998/3, PhD degree, Mechanical Design Engineering, [Yamaguchi University](#), Japan

**Working Experiences:**

1. 1989/5-1994/1, Northwestern Polytechnical University, China
2. 1998/4-2011/3, Nabtesco Corporation, Japan
3. 2011/4-Present, Shimane University, Japan

### **Research Interests:**

1. Mechanical design and machine elements
2. Static and dynamic behavior analyses of various kinds of gears and geared mechanical systems
3. Strain wave gearing, pin gear reducers and planetary gear devices used as joints of industry robots
4. Power transmission systems used in helicopters, aircrafts, aerospace and wind turbines
5. Dynamics and safety problems of high-speed trains
6. Applications of finite element method in engineering design

### **International Academic Activities:**

#### **(1) Reviewers for following international journals and publishers:**

1. Transaction of ASME, [Journal of Mechanical Design](#) (2000-2009)
2. Transaction of ASME, [Journal of Vibration and Acoustics](#) (2006)
3. [Mechanism and Machine Theory](#), Publisher: Elsevier (2005-2019)
4. [Journal of Mechanical Engineering](#), Publisher: University Ljubljana, Slovenia (2011)
5. Proceedings of the Institution of Mechanical Engineers, Part C, [Journal of Mechanical Engineering Science](#) (2011,2013-2016)
6. [International Journal of Mechanical Sciences](#), Publisher: Elsevier (2010)
7. [Mechanics Based Design of Structures and Machines](#), Publisher: Taylor & Francis (2010)
8. [Indian Journal of Engineering & Materials Sciences](#) (2009, 2014)
9. [Bentham Science Publishers](#) (2009)
10. [Mechanics of Advanced Materials and Structures](#), Publisher: Taylor & Francis (2008)
11. [Applied Mathematical Modelling](#), Publisher: Elsevier (2006)
12. [Meccanica](#), Publisher: Springer (2010-2011)
13. Journal of Applied Mechanical Engineering, Publisher: OMICS Publishing Group (2011)
14. International Journal of Engineering, Science and Technology, Publisher: MultiCraft (2012)
15. Journal of Advanced Mechanical Design, Systems, and Manufacturing, Publisher: JSME (2012)

16. [Multidiscipline Modeling in Materials and Structures](#), Publisher: Emerald Group (2012)
17. Scientific Research and Essays, Academic Journals (2013)
18. [Chinese Journal of Aeronautics](#), Publisher: Elsevier (2013-2014)
19. International Journal of Materials and Structural Integrity (2013)
20. Engineering Structures, Publisher: Elsevier (2017)
21. Journal of Zhejiang University-SCIENCE A (2017)
22. Journal of the Brazilian Society of Mechanical Sciences and Engineering (2017/10)
23. Journal of Sound and Vibration, Publisher: Elsevier (2017/12)
24. Measurement, Publisher: Elsevier (2017-2018)
25. Tribology Online, Publisher: Japanese Society of Tribologists (2018/11)
26. Materials Performance and Characterization, ASTM International (2019/8)
27. IEEE Access (2019/9)
28. International Journal of Engine Research, SAGE Publishing (2021/5)
29. Forschung im Ingenieurwesen, Springer Nature (2021/6)

**(2) Other academic activities:**

1. [The International Conference on Power Transmissions \(ICPT2011\)](#), (2010-2011) China, Member of Scientific Committee & Session Chairs
2. [The 4th International Conference on Power Transmissions](#), (2012), Romania, Reviewer
3. Ph.D Thesis (Doctoral dissertation) examiner, National Institute of Technology, India (2012)
4. JSME Mechanical Engineering Congress (2012), Session Chair
5. JSME Mechanical Engineering Congress, Chugoku-Shikoku Branch (2014), Session Chair & Best paper Judges
6. 10<sup>th</sup> International Symposium on Advanced Science and Technology in Experimental Mechanics (2015), Member of Scientific Committee & Member of Local Executive Committee
7. Ph.D Thesis (Doctoral dissertation) examiner, Indian Institute of Technology (IIT), India (2016)
8. JSME Machine Design & Tribology Division, Active member of Administration committee (2014/4-2016/3)
9. JSME Machine Design & Tribology Division, Active member of Administration committee (2017/4-2019/3)

10. Special lecture in India supported by GIAN (Global Initiative of Academic Networks), a new program approved by Govt. of India (2018)
11. Ph.D Thesis (Doctoral dissertation) examiner, Visvesvaraya Technological University, India (2020/5, 2020/11, 2021/1, 2021/10)
12. International member of Scientific Committee, 2021 International Conference of Mechanical Design & The 21st Annual Conference on Mechanical Design, Organized by The Mechanical Design Institution of Chinese Mechanical Engineering Society (2021/8)
13. Ph.D Thesis (Doctoral dissertation) examiner, Sardar Vallabhbhai National Institute of Technology (SVNIT), India (2022/1)

**Lecturers of Industry Seminars on Gears and Others:**

1. "Shimane University Industry-Academia-Government Information Exchange Meeting", organized by Shimane University Industry-Academia Collaboration Center and Shimane Industry Promotion Foundation (2012/2).
2. "Gear Strength, Vibration and Noise", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2015/9)
3. "Machine Elements and Machine Design", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2016/8)
4. "Gear Technologies", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2017/3)
5. "Machine elements and applications in machine design", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2018/3)
6. "Gear design, strength, vibration and noise", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2018/9)
7. "Application of the finite element method in strength analysis of machine elements and mechanical system", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2019/6)
8. "Gear Basics and Noise Reduction / Strength Improvement Technology", organized by Shimane Industrial Promotion Foundation / Shimane Industrial Technology Center (2019/11)
9. "Strength Design Techniques for Machine Design and Their Points", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2020/3)
10. "Gear Equipment Design and Strength / Vibration Analysis", organized by Tech-Design Inc., Tokyo, Japan (2020/9)

11. "Gear Basics and Strength Design and Vibration / Noise Reduction Measures", organized by Nihon Techno Center Co., Ltd. Tokyo, Japan (2020/10)
12. "Basics of Machine Elements, Damage Modes, and How to Utilize Strength Calculation / Analysis Methods for Strength Design", invited by Nihon Techno Center Co., Ltd. Tokyo, Japan (2021/3)
13. "Basic Knowledges on Gears, Design, Strength Calculations, Vibration and Noise Reduction Measures of Gears", invited by Nihon Techno Center Co., Ltd. Tokyo, Japan (2021/12)

### **Invited lectures**

To be opened.

### **Awards:**

1. "[Outstanding Contribution in Reviewing](#)" rewarded by *Elsevier* Press in 2017.
2. "[Outstanding Contribution in Reviewing](#)" rewarded by *Elsevier* Press in 2018.
3. Other 7 rewards omitted here

### **Introduced in Newspapers and Magazines**

1. In 2015, the researches in our lab were reported in the newspaper named "[Bearing News](#)", a domestic Japanese newspaper distributed mainly in Japanese companies.
2. In 2016, the researches in our lab were reported in the magazine named "[Tribology](#)", a Japanese monthly journal.
3. In 2018/6, reported in "San-in Chuo Shimpo", a local newspaper
4. In 2017, I wrote the front column of the June issue of the "Tribology" magazine, "Special Feature on Machine Element Technology".
5. In 2020/4, we wrote the Engineering Hot News: "Gear Devices that Drive the Evolution of Machines" on the website of the 56 Faculty of Engineering, National University.
6. In 2021/3, "Technical Trends and Selection Methods for Gears", "Mechanical Design", March 2021 Extra Issue, Nikkan Kogyo Shimbun Editorial Department

### **Fund:**

We got about 35-million-yen research fund from many Japanese companies within past 10 years.

### Refereed Journal Papers:

1. **Shuting Li**, “Strength analysis of the roller bearing with a crowning and misalignment error”, **Engineering Failure Analysis**, Elsevier Press, Vol. 123, May 2021, 105311, pp.1-15
2. **Shuting Li**, “A mathematical model and numeric method for contact analysis of rolling bearings”, **Mechanism and Machine Theory**, Elsevier Press, Vol. 119, 2018, pp.61-73 ([Most Downloaded Mechanism and Machine Theory Articles](#))
3. **Shuting Li**, “Diaphragm stress analysis and fatigue strength evaluation of the flex-spline, a very thin-walled spur gear used in the strain wave gearing”, **Mechanism and Machine Theory**, Elsevier Press, Volume 104, October 2016, pp.1-16
4. **Shuting Li**, “Effects of misalignment error, tooth modifications and transmitted torque on tooth engagements of a pair of spur gears”, **Mechanism and Machine Theory**, Elsevier Press, Vol. 83, 2015, pp.125-136
5. **Shuting Li**, “The latest design technologies for gear devices with great transmission ratios”, **Power Transmission Engineering**, Randall Publications LLC, USA, Dec. 2014, pp.70-76
6. **Shuting Li**, “Design and strength analysis methods of trochoidal gear reducers”, **Mechanism and Machine Theory**, Elsevier Press, Volume 81, 2014, pp.140-154
7. **Shuting Li**, “Effects of centrifugal load on tooth contact stresses and bending stresses of thin-rimmed spur gears with inclined webs”, **Mechanism and Machine Theory**, Elsevier Press, Vol. 59, Issue 1, 2013, pp. 34-47
8. **Shuting Li**, “Contact Stress and Root Stress Analyses of Thin-Rimmed Spur Gears with Inclined Webs”, **Trans. ASME, Journal of Mechanical Design**, Vol.:134 No. Issue 5, 2012
9. **Shuting Li**, “A challenge to design of a new harmonic drive device”, **Applied Mechanics and Materials**, Vol.86, pp.43-46, 2011
10. **Shuting Li**, “Loaded gear contact analyses for pin gear reducers”, **Applied Mechanics and Materials**, Vol.86, pp.129-132, 2011
11. **Shuting Li**, “Effect of addendum on contact strength, bending strength and basic performance parameters of a pair of spur gears”, **Mechanism and Machine Theory**, Elsevier Press, Vol.43, Issue 12, pp.1557-1584, 2008
12. **Shuting Li**, “Contact problem and numeric method of a planetary drive with small teeth number difference”, **Mechanism and Machine Theory**, Elsevier Press, Vol.43, Issue 9, pp.1065-1086, 2008
13. **Shuting Li**, “Experimental investigation and FEM analysis of resonance frequency behavior of three-dimensional, thin-walled spur gears with a power-circulating test

- rig”, **Mechanism and Machine Theory**, Elsevier Press, Vol.43, Issue 8, 2008, pp.934-963, 2008
14. **Shuting Li**, “Centrifugal load and its effects on bending strength and contact strength design of a high speed thin-walled gear with offset web”, **Mechanism and Machine Theory**, Elsevier Press, Vol. 43, Issue 2, pp.217-239, 2008
  15. **Shuting Li**, “Effects of machining errors, assembly errors and tooth modifications on load-carrying capacity, load-sharing rate and transmission error of a pair of spur gear”, **Mechanism and Machine Theory**, Elsevier Press, Vol.42, Issue 6, pp.698-726, 2007
  16. **Shuting Li**, “Finite element analyses for contact strength and bending strength of a pair of spur gear with machining errors, assembly errors and tooth modifications”, **Mechanism and Machine Theory**, Elsevier Press, Vol.42, Issue 1, pp.88-114, 2007
  17. **Shuting Li**, “Gear contact model and loaded tooth contact analysis of a three-dimensional, thin-rimmed gear”, **Trans. ASME, Journal of Mechanical Design**, Vol.124, Issue 3, pp.511-517, 2002
  18. **Shuting Li**, “Deformation and bending stress analysis of three-dimensional, thin-rimmed gears”, **Trans. ASME, Journal of Mechanical Design**, Vol.124, Issue 1, pp.129-135, 2002
  19. T. Ishida, T. Yoshida and **S. Li**, “Relationships among face width, amount of gear error, gear dimension, applied torque and tooth load in cycloidal gears”, **Trans. JSME**, Series C, Vol.64, No.623, pp.2711-2717, 1998
  20. T. Ishida, **S. Li**, T. Yoshida and T. Hidaka, “Le ruote dentate cicloidal a corona sottile”, **Organi Di Trasmissione** (In Italian), pp.48-56, 1997
  21. **Shuting Li** and T. Ishida, “A method of analyzing tooth load distribution for a thin wall spur gear with assembly errors”, **Trans. JSME**, Series C, Vol.63, No.615, pp.4017-4024, 1997
  22. T Ishida and **S. Li**, “A method for analyzing tooth load distribution and contact stress of a thin wall spur gear using FEM and a mathematical programming method”, **Trans. JSME** Series C, Vol.63, No.606, pp.585-591, 1997
  23. Y. Shen, **S. Li**, and T. Lin, “Design sensitivity analysis of gear transmission system” **Chinese Journal of Mechanical Engineering**, Vol.32, No.5, pp.13-18, October, 1996
  24. G. Liu, T. Lin, S. Li and Y. Zhang, “Experimental investigation on the effect of 3D-tooth modifications on dynamic resonance stresses of the thin-rimmed helical gears”, **Journal of Aerospace Power**, Vol.11, No.1, pp.42-45, 1996

25. Y. Shen, T. Zhang, **S. Li**, T. Lin, "Vibration analysis of flexible rolling bearings", **Mechanical Science and Technology for Aerospace Engineering**, Vol.35, No.05, pp.1-6, 1995
26. R. Zhang, G. Liu, T. Lin, **S. Li**, "Experimental study on structural dynamic stresses of thin rimmed helical gears", **Journal of Aerospace Power**, Vol.10, No.4, pp.76-79, 1995
27. Y. Shen, **S. Li** and T. Lin, "Prediction of optimal location of damping layer in complex structure for reducing vibration", **Journal of Northwestern Polytechnical University**, Vol.13 No.3, pp.331-335, 1995
28. **Shuting Li**, Y. Shen, D. He, T. Lin and G. Liu, "Vibration analysis of flexspline under a small deformation using finite element method", **Chinese Journal of Mechanical Engineering**, Vol. 30, Supp., pp.128-133, 1994
29. **Shuting Li**, "The 9-nodal element used for connection of shell and solid structures and its application in structural vibration analysis of FEM", **Journal of Vibration and Shock**, Vol.13, No.4, pp.56-61, 1994
30. **Shuting Li**, Y. Shen and T. Lin, "Dynamic structure design of an aeronautic gear," **Acta Aeronautica ET Astronautica Sinica** (In Chinese), Vol.15, No.8, pp.937-941, 1994
31. **Shuting Li**, G. Liu, D. He, Y. Shen, "An iteration perturbation solution for nonlinear equations of motion of gear vibration", **Mechanical Science and Technology**, Vol.34, extra issue, pp.44-50, 1994
32. Y. Shen, T. Lin and S. Li, "Experimental mode shape analysis of the flexspline structure used in harmonic drive devices", **Mechanical Transmission** (In Chinese), Vol.18, No.1, pp.37-39, 1994
33. N. Liu, **S. Li** and Y. Shen, "Multiple objects-optimal design of a harmonic drive", **The Journal of Gear** (In Chinese), Vol.13, No.1, pp.10-14, 1989
34. Y. Shen and **S. Li**, "Gearing analysis of a harmonic drive with arc tooth profile", **Mechanical Science and Technology for Aerospace Engineering**, Vol.29, No.1, pp.20-26, 1989

#### **Refereed International Conference Papers:**

1. **Shuting Li** and M. Motooka, A finite element method used for contact analysis of rolling bearings, The 8th International Conference on Computational Methods (ICCM2017), 2017/7, Guilin, China.



2. **Shuting Li** and Yuki Kono, Transmission Error Construction of a Pair of Spur Gears Based on Gear Accuracy Data Measured, The JSME International Conference on Motion and Power Transmissions (MPT2017-Kyoto), 2017/3/2
3. **Shuting Li** and Ryuichi SONEZAKI, “Effect of Machining Errors on Vibration Level of Spur Gears”, 10th International Symposium on Advanced Science and Technology in Experimental Mechanics, Nov. 2015, Japan
4. **S. Li** and A. Nishimura, “Dynamic Behavior Analysis of a Pair of Ground Spur Gears”, The 6th International Conference on Manufacturing, Machine Design and Tribology (ICMDT2015), Japan, (4/2015)
5. **S. Li**, The latest design technologies for gear devices with great transmission ratios, International Gear Conference, Aug. 25-28, 2014, INSA-Lyon, France.
6. **S. Li**, “A challenge to design of a new harmonic drive device”, The International Conference on Power Transmission (ICPT2011), Xi’an, China, 2011
7. **S. Li**, “Loaded gear contact analyses for pin gear reducers”, The International Conference on Power Transmission (ICPT2011), Xi’an, China, 2011
8. **S. Li**, “Stress analysis and strength design method of a trochoidal gear reducer”, The 11<sup>th</sup> World Congress in Mechanism and Machine Science (IFTToMM-2003), Tianjin, China. Vol.2, pp.818-823, 2004
9. **S. Li** and Y. Shen, “Fatigue failure patterns and strength design methods of a harmonic drive device”, The 11<sup>th</sup> World Congress in Mechanism and Machine Science (IFTToMM-2003), Tianjin, China. Vol.2, pp.805-810, 2004
10. **S. Li**, “Study on dynamic behavior of three-dimensional, thin-rimmed spur gears”, The JSME International Conference on Motion and Power Transmissions in Fukuoka (MPT2001-Fukuoka), Vol. 1, pp.15-20, 2001
11. T. Ishida, **S. Li**, T. Yoshida and T. Hidaka, “Tooth load of thin rim cycloidal gear”, The 7<sup>th</sup> ASME International Power Transmission and Gearing Conference, DE-VOL.88, SAN DIEGO, CALIFORNIA, pp.565-571, 1996
12. **S. Li**, Y. Shen, G. Liu and T. Lin, “Dynamic behavior of the flexspline of a harmonic drive”, The 2<sup>nd</sup> International Conference on Mechanical Dynamics and its Applications in Engineering, Zhengjiang, China, Vol.1, pp.165-168, 1992

**“Top 25 Hottest Articles”** (<http://top25.sciencedirect.com/>)

1. Finite Element Analyses for Contact Strength and Bending Strength of a Pair of Spur Gear with Machining Errors, Assembly Errors and Tooth Modifications, Mechanism and Machine Theory, Issue 1, 2007, pp.88-114

2. Effects of Machining Errors, Assembly Errors and Tooth Modifications on Load-Carrying Capacity, Load-Sharing Rate and Transmission Error of a Pair of Spur Gear, Mechanism and Machine Theory, Issue 6, 2007, pp.698-726
3. Contact problem and numeric method of a planetary drive with small teeth number difference, Mechanism and Machine Theory, Elsevier Press, Volume 43, Issue 9, 2008, pp.1065-1086
4. Effect of addendum on contact strength, bending strength and basic performance parameters of a pair of spur gears, Mechanism and Machine Theory, Elsevier Press, Volume 43, Issue 12, pp.1557-1584
5. Design and strength analysis methods of trochoidal gear reducers, Mechanism and Machine Theory, Elsevier Press, Elsevier Press, Volume 81, 2014, pp.140-154
6. Effects of misalignment error, tooth modifications and transmitted torque on tooth engagements of a pair of spur gears, Mechanism and Machine Theory, Elsevier Press, Vol. 83, 2015, pp.125-136

**“ASME Top 10 Most Downloaded Articles, ASME Journal of Mechanical Design”**

1. [Contact Stress and Root Stress Analyses of Thin-Rimmed Spur Gears with Inclined Webs], **Trans. ASME, Journal of Mechanical Design**, vol.:134 No. Issue 5, 2012

**JSME Conference Papers**

We had about 40 JSME conference papers presented in Japan. They are omitted here.

**Patents:**

1. S. Li, Harmonic drive device, Chinese Patent No.CN101031737
2. S. Li, Wave gear device, United States Patent No. US 2008/0060473
3. S. Li, Harmonic drive device, Japanese Patent No. 2004-287451 (2006-97861)
4. S. Li, A new type of silk-hat harmonic drive, Japanese Patent No. 2005-197244 (2007-16838)
5. S. Li, Gear devices with eccentric rocking movement, Japanese Patent No. 2008-263644 (2010-91073)
6. S. Li and others, Power transmission device, Japanese Patent No. 2009-60097(2010-210073)
7. S. Li and others, Controlling-method of aerodynamic brake, Application number: 20130138278, Issued: May 30, 2013, Application Serial: 13/814,908
8. S. Li, Wave gear device, European Patent EP1813836

9. S. Li, Eccentric rocking type gear device, Pub. No.WO/2010/041549, International Application No.PCT/JP2009/066376

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