

Prof. Dr.-Ing. habil. Dr. h. c. Chuanzeng Zhang

Chair of Structural Mechanics, Department of Civil Engineering, School of Science and Technology,
University of Siegen, D-57068 Siegen, Germany

Curriculum Vitae

Name: Chuanzeng ZHANG
Day of birth: 16 December 1957
Place of birth: Shandong, PR China
Marital status: Married, two children
Nationality: German
Current position: Professor (C4)
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Education and professional experiences:

- Since 01.2014: Vice-Chair of the Department of Civil Engineering, School of Science and Technology, University of Siegen, Germany
- Since 04.2014: Visiting Professor of the Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, PR China
- Since 04.2014: Visiting Professor of the China Building Materials Academy, Beijing, PR China
- Since 02.2011: Member of the Research Advisory Committee of the School of Science and Technology, University of Siegen, Germany
- 02.2011-02.2012: Member of the Council of the School of Science and Technology, University of Siegen, Germany
- Since 01.2009: Guest Professor of the Harbin Institute of Technology, Harbin, PR China
- 12.2007-01.2010: Director of the Institute of Structural Engineering, Department of Civil Engineering, University of Siegen, Germany
- Since 31.07.2007: Vice-President of the „International Chinese Association for Computational Mechanics“
- Since 09.2006: Guest Professor of the Harbin Engineering University, Harbin, PR China
- 04.2006-04.2010: Member of the Senate Commission “Research and Scientific Promotion of Young Scientists”, University of Siegen, Germany
- Since 04.2006: Research Coordinator of the Department of Civil Engineering, University of Siegen
- 10.2005-04.2008: Vice-Chairman of the Committee for PhD Study at the Department of Civil Engineering, University of Siegen

- Since 05.2005: Leader of the DVM Working Group "Mixed-Mode Problems" (DVM: German Association for Material Testing)
- Since 10.2004: Professor (C4) and Chair of Structural Mechanics, Department of Civil Engineering, University of Siegen, Germany
- Since 09.2002: Guest Professor of the Tongji University, Shanghai, PR China
- 01.1999-10.2004: Consulting Member of the Vice-Rector for Research, University of Applied Sciences Zittau/Görlitz, Germany
- 01.1999-10.2004: Research Coordinator of the Department of Civil Engineering, University of Applied Sciences Zittau/Görlitz, Germany
- 11.1995-10.2004: Professor of the Department of Civil Engineering, University of Applied Sciences Zittau/Görlitz, Germany
- 01.1993-01.1996: Senior Consulting Engineer at BGS Ingenieursozietät for Civil and Transportation Engineering, Frankfurt/M., Germany
- 15.12.1993: Habilitation at the Technical University Darmstadt, Germany
Topic of the Habilitation: On Wave Propagation in Cracked Solids
- 09.1990-01.1993: Visiting Scholar at the Institute of Mechanics, Technical University Darmstadt, Germany
- Since 01.1990: Professor of the Department of Engineering Mechanics, Tongji University, Shanghai, PR China
- 04.1989-10.1989: Visiting Scholar working with Professor J. D. Achenbach, Center for Quality Engineering and Failure Prevention, Northwestern University, USA
- 04.1988-04.1989: Associate Professor of the Department of Engineering Mechanics, Tongji University, Shanghai, PR China
- 10.1986-04.1988: Post-doctoral research fellowship with Professor Jan D. Achenbach, Department of Civil Engineering, Northwestern University, USA
30. April 1986: PhD (Dr.-Ing.) defense. Grade: Excellent
Topic of PhD thesis: Solution of dynamic crack problems by using integral equation methods
- 10.1983-10.1986: Research Assistant and PhD Candidate of Prof. Dr.-Ing. Dietmar Gross, Institute of Mechanics, Technical University of Darmstadt, Germany
- 09.1983: Diploma (Dipl.-Ing.) defense. Grade: Excellent
- 10.1980-09.1983: Study at the Technical University Darmstadt, Germany
- 03.1977-06.1980: Study of Building Materials, Tongji University, Shanghai, PR China
- 06.1975-03.1977: Practical training in Province Shandong, PR China
- 01.1970-06.1975: Middle school in Province Shandong, PR China
- 01.1965-01.1970: Primary school in Province Shandong, PR China

Language ability:

Chinese, German and English in speaking and writing.

Teaching experiences:

- Since 10.2004: Department of Civil Engineering, School of Science and Technology University of Siegen, Germany

11.1995-10.2004: Department of Civil Engineering, University of Applied Sciences
Zittau/Görlitz, Germany

04.1988-09.1990: Department of Engineering Mechanics, Tongji University, Shanghai,
PR China

Courses taught:

- Engineering Mechanics
- Structural Mechanics
- Structural Dynamics
- Plane Loading-Bearing Structures (Slabs, Plates and Shells)
- Design of Concrete Structures
- Eurocode 2: Concrete Structures
- Design of Prestressed Concrete Structures
- Design of Masonry Structures
- Design of Bridges
- Mechanics of Materials
- Fracture and Damage Mechanics
- Finite Element Method (FEM)
- Boundary Element Method (BEM)

Refereeing activities:

- ASME Journal of Applied Mechanics
- Journal of the Mechanics and Physics of Solids
- International Journal of Solids and Structures
- International Journal of Fracture
- International Journal for Numerical Methods in Engineering
- Applied Mechanics Reviews
- Journal of Mechanics
- Acta Mechanica
- Wave Motion
- Computational Mechanics
- Archive of Applied Mechanics (Ingenieur Archiv)
- Computer Modeling in Engineering & Sciences
- Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)
- Electronic Journal of Boundary Elements
- European Journal of Mechanics A/Solids
- Computational Materials Science
- Engineering Fracture Mechanics
- Computers & Structures
- Journal of Computational and Applied Mathematics
- Engineering Analysis with Boundary Elements
- International Journal of Computational Methods
- Journal of Engineering Mathematics
- Meccanica
- Building Research Journal
- Journal of Sound and Vibration
- International Journal of Fatigue
- Fatigue and Fracture of Engineering Materials and Structures
- Mechanics Research Communications
- Structural Engineering and Mechanics
- Philosophical Magazine
- Surface and Coatings Technology

- Communications in Numerical Methods in Engineering
- International Journal of Mechanical Sciences
- Journal of Applied Physics
- Progress in Electromagnetic Research (PIER)
- Journal of Electromagnetic Waves and Applications
- Journal of Mechanics of Materials and Structures
- Acta Mechanica Sinica
- International Journal of Thermal Sciences
- Mechanics of Advanced Materials and Structures
- Composite Structures
- Computer Methods in Applied Mechanics and Engineering
- Computers, Materials & Continua
- Engineering Mechanics
- Advances in Acoustics and Vibration
- Australian Journal of Structural Engineering
- Engineering Structures
- Journal of Nondestructive Evaluation
- Journal of Materials Science
- Applied Mathematical Modelling
- Computational Physics
- Microscopy Research and Technique
- Physica E
- Construction & Building Materials
- International Journal of Pressure Vessels and Piping
- Journal of Strain Analysis for Engineering Design
- Advances in Applied Mathematics and Mechanics (AAMM)
- Acta Mechanica Solida Sinica
- Journal of Civil Structural Health Monitoring
- Scripta Materialia
- Composites Part B: Engineering
- International Journal of Materials and Product Technology (IJMPT)
- Computers and Concrete
- Journal of Intelligent Material Systems and Structures
- Engineers Australia Technical Journals
- Quarterly Journal of Mechanics and Applied Mathematics
- International Journal of Heat and Mass Transfer
- Soil Dynamics and Earthquake Engineering
- Corrosion Science
- Advances in Materials and Engineering
- Materials - Open Access Journal
- Physics Letters A
- ...

Major research fields:

- Acoustic and elastic wave propagation phenomena
- Elastodynamics and structural dynamics
- Computational mechanics (Boundary element method (BEM), Smoothed finite element method (SFEM), Extended finite element method (XFEM), Meshfree or meshless methods, Spectral methods, etc.)
- Dynamic analysis of anisotropic materials with cracks and defects
- Mechanics of smart (piezoelectric, magneto-electroelastic, shape-memory) materials and structures

- Static and dynamic analysis of functionally graded materials (FGMs) and structures without/with cracks
- Micromechanics of concrete materials and structures
- Mechanics of multifunctional (noise-absorbing, vibration-damping, heat-isolating and energy-saving) materials and structures
- Engineering fracture and damage mechanics
- Fatigue analysis of engineering materials and structures
- Band structures (pass-bands and band-gaps) and wave tuning in phononic crystals
- Surface and interface effects in nano-materials and nano-structures (nano-ribbons, nano-tubes, nano-plates and nano-shells)

Publications:

- 2 monographs
- Over 650 technical publications in referred journals and conference proceedings
- Over 40 research reports
- Over 60 invited lectures

Selected activities for international conferences / workshops in recent years:

- International Conference on Boundary Element and Meshless Techniques, 15-17 July 2014, Florence, Italy
Member of the Scientific Advisory Committee
- International Conference on Computational & Experimental Engineering and Sciences 2014 (ICCES'14), 12-17 June 2014, Changwon, Korea
Member of the International Organizing Committee
Organizer of the Mini-Symposium "Recent Developments of the Boundary Element Method"
- 2014 Conference of the International Association for Boundary Element Methods (IABEM 2014), 13-15 August 2014, Zhengzhou, PR China
Member of the Scientific Advisory Committee
- 2014 Symposium on Piezoelectricity, Acoustic Waves and Device Application. 30 October - 2 November 2014, Beijing, PR China
Vice-Chairman of the Scientific Committee
- International Conference on Computational & Experimental Engineering and Sciences 2013 (ICCES'13), 24-28 May 2013, Seattle, USA
Member of the International Organizing Committee
- International Conference on Boundary Element and Meshless Techniques, 16-18 July 2013, Paris, France
Member of the Scientific Advisory Committee
- 13th International Conference on Fracture (ICF13), 16-21 June 2013, Beijing, PR China
Member of the International Scientific Committee
Co-Organizer of the Mini-Symposium 09 "Boundary Element Methods and Applications"
- 5th Asia-Pacific Congress on Computational Mechanics & 4th International Symposium on Computational Mechanics (APCOM2013 & ISCM2013), 11-14 December 2013, Singapore
Member of the International Organization Committee
Co-Organizer of the Mini-Symposium MS-47 "Fast Boundary Element Methods and Multi-Field Applications"
Co-Organizer of the Mini-Symposium MS-58 "Boundary Element and Related Mesh-Reduction Methods"
Co-Organizer of the Mini-Symposium MS-88 "Computational Acoustics and Elastodynamics in Solids and Structures"
- International Conference on Modern Problems of Mechanics and Mathematics, 21-25 May 2013, Lviv, Ukraine

Member of the Program Committee

- International Conference on Computational & Experimental Engineering and Sciences 2012 (ICCES'12), 30 April - 4 May 2012, Crete, Greece

Member of the International Organizing Committee

Organizer of the Minisymposium “Inverse Problems in Sciences and Engineering”

- International Conference on Boundary Element and Meshless Techniques, 3-5 September 2012, Prague, Czech Republic

Member of the Scientific Advisory Committee

- 4th International Conference on Computational Methods (ICCM2012), 25-27 November 2012, Gold Coast, Australia

Member of the International Organizing Committee

- Global Chinese Workshop on Computational Methods in Engineering, 18-21 May 2012, Changsha, PR China

Member of the Scientific Committee

- 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), 10-14 September 2012, Vienna, Austria.

Organizer of the Minisymposium “Recent Advances in Boundary Element and Meshless Methods”

- International Conference on Computational & Experimental Engineering and Sciences 2011 (ICCES'11), 18-21 April 2011, Nanjing, PR China

Member of the International Organizing Committee

Organizer of the Minisymposium “Inverse Problems in Sciences and Engineering”

- International Conference on Boundary Element and Meshless Techniques, 13-15 July 2011, Brasilia, Brazil.

Member of the Scientific Advisory Committee

- International Symposium on Advances in Applied Mechanics and Modern Information Technology 2011 (AAM&MIT'11), 22-23 September 2011, Baku, Azerbaijan.

Member of the International Scientific Committee

- 11th International Conference on Boundary Element Techniques. 12-14 July 2010, Berlin, Germany.

Conference Organizer

Organizer of the Symposium “Recent Advances in Theory and Applications of BEM”

- International Conference on Computational & Experimental Engineering and Sciences 2010 (ICCES'10), 28 March -1 April 2010, Las Vegas, USA

Member of the International Organizing Committee

Organizer of the Minisymposium “Meshless Methods in Solid Mechanics”

- IV European Congress on Computational Mechanics (ECCM IV): Solids, Structures and Coupled Problems in Engineering, 16-21 May 2010, Paris, France

Organizer of the Minisymposium “Fracture and Damage Mechanics of Advanced Materials with Multifield Coupling”

- VIII International Conference on Mathematical Problems of Mechanics of Inhomogeneous Structures, 14-17 September 2010, Lviv, Ukraine

Member of the Program Committee

- 2nd International Conference on Waste Engineering and Management, 13-15 October 2010, Shanghai, PR China

Member of the International Advisory Committee

- The Fourth International Conference on Computational Methods (ICCM2010), 19-21 November 2010, Zhangjiajie, PR China

Member of the Organizing Committee

- 2010 Symposium on Piezoelectricity, Acoustic Waves, and Device Applications, 10-13 December 2010, Xiamen, Fujian, PR China

Member of the Scientific Committee

- 12th International Conference on Fracture (ICF 12), 12-17 July 2009, Ottawa, Ontario, Canada

Special Session Organizer

- International Conference on Computational Modelling and Advanced Simulations (CMAS2009), ECCOMAS Thematic Conference, 30 June-3 July 2009, Bratislava, Slovakia
Member of the Scientific Committee and Plenary Lecture
- International Conference on Computational & Experimental Engineering and Sciences 2009 (ICCES'09), 8-13 April 2009, Phuket, Thailand
Member of the International Organizing Committee
- The US National Conference on Computational Mechanics, 16-19 July 2009, Columbus, Ohio, USA
Mini-Symposium: Modelling of Smart Structures, Symposium Organizer
- 2nd International Symposium on Computational Mechanics (ISCM), 30 November-1 December 2009, Hong Kong, China
12th International Conference on the Enhancement and Promotion of Computational Methods in Engineering and Science (EPMESC XII), 2-3 December 2009, Macau, China
Co-Chairman of the Organizing Committee and Keynote Speaker
- 10th International Conference on Boundary Element Techniques. 22-24 July 2009, Athens, Greece.
Member of the Scientific Advisory Committee
- 8th International Conference on Fracture and Damage Mechanics, 8-10 September 2009, Malta.
Member of the International Scientific Committee
- International Conference on Computation Mathematics and Mathematical Problems of Mechanics, 31 August -4 September 2009, Lviv, Ukraine.
Member of the Program Committee
- 9th International Conference on Boundary Element Techniques. 9-11 July 2008, Seville, Spain.
Member of the Scientific Advisory Committee
- 7th International Conference on Fracture and Damage Mechanics, 9-11 September 2008, Seoul, Korea.
Member of the International Scientific Committee
- International Conference on Modern Problems of Mechanics and Mathematics, 25-29 May 2008, Lviv, Ukraine.
Member of the Program Committee
- ECCOMAS Conference on "Computational Modeling and Experiments of the Composites Materials with Micro- and Nano-Structure" 28-31 May 2007, Liptovsky Mikulas, Slovak Republic.
Member of the Scientific Committee
- 6th International Conference on Fracture and Damage Mechanics, 17-19 July 2007, Madeira, Portugal.
Member of the International Scientific Committee
Sessions A6: Stress and Failure Analysis: Session Chairman
- 8th International Conference on Boundary Element Techniques. 24-26 July 2007, Naples, Italy.
Member of the Scientific Advisory Committee, Keynote Speaker
- 2007 International Symposium on Computational Mechanics with the Establishment of "Chinese International Association for Computational Mechanics". 30 July-1 August 2007, Beijing, PR China.
Member of the Organizing Committee and Semi-Plenary Speaker
Sessions RS09-4(7): Meshless/Meshfree Methods and Dimension-Reduction Methods: Session Chairman

Honors and awards:

- 01.2015: Honorary doctorate (doctor honoris causa or Dr. h. c.) by the Slovak University of Technology in Bratislava
- 10.2014: Member of the European Academy of Sciences

04.2014: Visiting Professor of the Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, PR China

04.2014: Visiting Professor of the China Building Materials Academy, Beijing, PR China

12.2010-12.2011: Distinguished Visiting Scholar of the Faculty of Science and Technology, University of Macau

2011 - : Honorary President of the Tongji University Alumni Association in Germany

2008-2010: President of the Tongji University Alumni Association in Germany

01.2009: Guest Professor of the Harbin Institute of Technology, Harbin, PR China

2007 - : Vice-President of the „International Chinese Association for Computational Mechanics“

2007-2008: Vice President of the Tongji University Alumni Association in Germany

09.2006: Guest Professor of the Harbin Engineering University, Harbin, PR China

07.2004: Fellow of the Wessex Institute of Technology, UK

09.2002: Guest Professor of the Tongji University, Shanghai, PR China

1990: Award of the Shanghai High-Education Bureau, Shanghai, PR China

1986-1988: Post-doctoral research fellowship with Professor Jan D. Achenbach, Northwestern University, USA

Editorial boards:

- International Journal of Computational Methods (IJCM)
- Structural Durability & Health Monitoring (SDHM)
- Computer Modeling in Engineering & Sciences (2003-2007)
- Electronic Journal for Boundary Elements
- Mathematical Methods and Physicomechanical Fields
- Computational and Experimental Methods in Structures, Book Series, Word Scientific & Imperial College Press
- Engineering Fracture Mechanics (Managing Guest Editor, 2009-2010)
- Advances in Materials and Mechanics (AMM), Co-Chief Editor, Book Series, HEP-Springer
- Engineering Analysis with Boundary Elements
- Advances in Mechanical Engineering (Guest Editor, 2013-)
- Chinese Quarterly of Mechanics (Guest Editor, 2014-)

Selected research projects in recent years:

- Bruchmechanische Analyse von Funktionsgradientenwerkstoffen (Project supported by the International Bureau of German Ministry for Education and Research (BMBF) and the Slovak Ministry for Education, Cooperation partners: Professor Jan Sladek and Professor Vladimir Sladek, Slovak Academy of Sciences)
- Dynamische Rissanalyse in anisotropen elastischen Materialien mit Hilfe einer Zeitbereichs-Randelementmethode (Project supported by the German Research Foundation (DFG))
- Numerische Untersuchungen zum dynamischen Verhalten von Piezokeramiken mit Rissen unter Stossbelastungen (DFG-Project)
- Mechanical Behavior of Notched Structural Components under Multiaxial Synchronous Cyclic Loading (Project supported by the German Academic Exchange Service (DAAD) and IKYDA (Greece), Cooperation partner: Professor Dr.-Ing. G. Savaidis, Department of Mechanical Engineering, Aristotle University of Thessaloniki, Greece)
- Computational Methods for Multicomponent Materials for Durable and Safe Structures (Project supported by DAAD and Slovak Academy of Sciences, Cooperation partners: Professor Jan Sladek and Professor Vladimir Sladek, Slovak Academy of Sciences)
- A Meshless Local Petrov-Galerkin Method for 3-D Anisotropic Elastodynamic Problems (German Research Foundation (DFG), 436 SLK 17/2/05)
- Implementierung einer netzfreien Methode zur Spannungsanalyse von Funktionsgradientenwerkstoffen (DFG-Project, 436 SLK 17/4/06)

- Transient Dynamic Crack Analysis in Piezoelectric Solids by BEM (Project supported by DAAD and Ministry for Education and Research of Spain, Cooperation partner: Professor Andres Saez and Professor Jose Dominguez, School of Engineering, University of Sevilla, Spain)
- Micromechanics of Damaged Composites under Dynamic Loading (EU INTAS-Project, Project coordinator, Cooperation partners from: Russian, Sweden, Slovakia, Spain, Ukraine)
- Gradientwerkstoffe mit Rissen unter Thermoschock (DFG-Project)
- Randelementanalyse in der dynamischen Bruchmechanik von 3-D elastischen Verbundwerkstoffen (DFG-Project)
- Modeling and Simulation of Functional Phononic Materials (Project supported by the German Academic Exchange Service (DAAD) and the China Scholarship Council (CSC), Cooperation partner: Professor Yuesheng Wang, Beijing Jiaotong University, China)
- Theoretical Modeling and Numerical Simulation of Phononic Crystals (DFG-Project)
- Analysis of Smart Functionally Graded Structures (DFG-Project)
- Modeling and Simulation of Multiferroic Nanostructures with Surface Effects (DFG-Project)
- Dynamic Properties of Multi-Functional Periodic Composites (Project supported by the German Ministry for Education and Research (BMBF), Cooperation partner: Professor Yuesheng Wang, Beijing Jiaotong University, China)
- Dynamische Analyse von magnetoelastischen Werkstoffen mit Rissen unter Stossbelastungen (DFG-Project)
- Mechanics of Multiferroic Composite Materials and Structures Involving Surface Effect (DFG-Project)
- Fracture Analysis of Multifunctional Electromagnetothermoelastic Composites (DAAD-Project, Cooperation partner: Prof. Dr. Taiyan Qin, China Agricultural University, China)
- Transient Dynamic Analysis of Cracked Materials (Project supported by DAAD and ARC (UK), Cooperation partner: Dr. Oleksandr Menshykov, University of Aberdeen, Scotland, UK)
- Forced Wave Excitation and Propagation in Anisotropic Laminate Composites and Functionally Graded Covers (DFG-Project)
- Analysis of the Dynamic Properties of Periodic Elastic Composites (DFG-Project)
- Nonlinear Size Effects of Micro- and Nano-Structures (DAAD-Project, Cooperation partner: Professor C. W. Lim, City University of Hong Kong, China)
- Surface Effects in Multi-Field Coupled Media (Project supported by the German Academic Exchange Service (DAAD) and the China Scholarship Council (CSC), Cooperation partner: Professor Weiqiu Chen, Zhejiang University, China)
- Advanced Computational Methods for Modelling Multi-Field Coupled Plate Problems (DFG-Project)
- On Functional Gradient Recycled Concrete (DFG-Project)
- New Theory of Plates and Shells and its Applications in Thermoelasticity of Laminated and Functionally Graded Composites (DFG-Project)
- Topology Optimization of Functional Phononic Materials (Project supported by the German Academic Exchange Service (DAAD) and the China Scholarship Council (CSC), Cooperation partner: Professor Yuesheng Wang, Beijing Jiaotong University, China)