

CURRICULUM VITAE

İlker Temizer

Associate Professor
Department of Mechanical Engineering
Bilkent University

Personal Data

DATE & PLACE OF BIRTH: İzmir, Turkey (1979)

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Academic Degrees

2013 *Doçent (YÖK)* Associate Professor Degree from the Turkish Higher Education Council
2005 *Doctor of Philosophy* in Mechanical Engineering, University of California, Berkeley (USA)
2003 *Master of Science* in Mechanical Engineering, University of California, Berkeley (USA)
2001 *Bachelor of Science* in Mechanical Engineering, Boğaziçi Üniversitesi (İstanbul, Turkey)

Employment History

2014 (Oct.) – present *Associate Professor*
Department of Mechanical Engineering
Bilkent University (Turkey)

2010 (Sept.) – 2014 (Sept.) *Assistant Professor*
Department of Mechanical Engineering
Bilkent University (Turkey)

2009 (Sept.) – 2010 (Aug.) *Junior Research Group Leader in the Graduate School MUSIC*
(*Multi-Scale Methods for Interface Coupling*)
Leibniz Universität Hannover (Germany)

2006 (Feb.) – 2010 (Aug.) *Post-Doctoral Researcher*
Institute of Continuum Mechanics (IKM)
Leibniz Universität Hannover (Germany)
Mentor: Prof. Dr.-Ing. Peter Wriggers (IKM Director)

2001 (Aug.) – 2005 (Dec.) *Graduate Student*
Department of Mechanical Engineering
University of California, Berkeley (USA)
Supervisor: Prof. Tarek I. Zohdi

Articles in Refereed Journals

- Advised and co-advised student names are underlined.
- h-index: 11 in Web of Science (WOS), 15 in Google Scholar.
- According to WOS, the sum of citations with/without self-citation is 545/458 from 344/315 papers.
- Conference proceedings (not shown) are not relevant in the field of computational mechanics. Related “*Conference Presentations*” are listed at the end of this document.

[The following works are with Bilkent University affiliation.]

38. Waseem, A., **Temizer, İ.**, Kato, J., Terada, K. (2017). Micro-Texture Design and Optimization in Hydrodynamic Lubrication via Two-Scale Analysis. *Struct. Multidisc. Optim.* (in press — DOI:10.1007/s00158-017-1713-5)
37. Waseem, A., Guilleminot, J., **Temizer, İ.** (2017). Stochastic Multiscale Analysis in Hydrodynamic Lubrication. *Int. J. Numer. Meth. Engrg.* (in press — DOI:10.1002/nme.5546)
36. Yıldırım, İ. N., **Temizer, İ.**, Çetin, B. (2017). Homogenization in Hydrodynamic Lubrication: Microscopic Regimes and Re-Entrant Textures. *Journal of Tribology* (in press — DOI:10.1115/1.4036770)
35. Kılıç, K. İ., **Temizer, İ.** (2016). Tuning Macroscopic Sliding Friction at Soft Contact Interfaces: Interaction of Bulk and Surface Heterogeneities. *Tribology International.*, 104:83-97.
34. Waseem, A., **Temizer, İ.**, Kato, J., Terada, K. (2016). Homogenization-Based Design of Surface Textures in Hydrodynamic Lubrication. *Int. J. Numer. Meth. Engrg.*, 108:1427-1450.
33. **Temizer, İ.**, Stupkiewicz, S. (2016). Formulation of the Reynolds Equation on a Time-Dependent Lubrication Surface. *Proc. R. Soc. A*, 472:20160032.
32. **Temizer, İ.** (2016). Sliding Friction Across the Scales: Thermomechanical Interactions and Dissipation Partitioning. *J. Mech. Phys. Solids*, 89:126-148.
31. Hesch, C., Franke, M., Dittmann, M., **Temizer, İ.** (2016). Hierarchical NURBS and a higher-order phase-field approach to fracture for finite-deformation contact problems. *Comput. Methods Appl. Mech. Engrg.*, 301:242-258.
30. **Temizer, İ.**, Hesch, C. (2016). Hierarchical NURBS in Frictionless Contact. *Comput. Methods Appl. Mech. Engrg.*, 299:161-186.
29. Kabacaoglu, G., **Temizer, İ.** (2015). Homogenization of soft interfaces in time-dependent hydrodynamic lubrication. *Computational Mechanics*, 56:421-441.
28. **Temizer, İ.** (2014). Computational Homogenization of Soft Matter Friction: Isogeometric Framework and Elastic Boundary Layers. *Int. J. Numer. Meth. Engrg.*, 100:953-981.
27. **Temizer, İ.**, Abdalla, M. M., Gürdal, Z. (2014). An Interior Point Method for Isogeometric Contact. *Comput. Methods Appl. Mech. Engrg.*, 276:589-611.
26. Dittmann, M., Franke, M., **Temizer, İ.**, Hesch, C. (2014). Isogeometric Analysis and thermomechanical mortar contact problems. *Comput. Methods Appl. Mech. Engrg.*, 274:192-212.

25. Wu, T., **Temizer, İ.**, Wriggers, P. (2014). Multiscale Hydro-Thermo-Chemo-Mechanical Coupling: Application to Alkali-Silica Reaction. *Comput. Mat. Sci.*, 84:381-395.
 24. **Temizer, İ.** (2014). Multiscale Thermomechanical Contact: Computational Homogenization with Isogeometric Analysis. *Int. J. Numer. Meth. Engrg.*, 97:582-607.
 23. **Temizer, İ.** (2013). Granular Contact Interfaces with Non-Circular Particles. *Tribology International*, 67:229-239.
 22. **Temizer, İ.**, Wu, T., Wriggers, P. (2013). On the Optimality of the Window Method in Computational Homogenization. *Int. J. Eng. Sci.*, 64:66-73.
 21. **Temizer, İ.** (2013). A Mixed Formulation of Mortar-Based Contact with Friction. *Comput. Methods Appl. Mech. Engrg.*, 255:183-195.
 20. Wu, T., **Temizer, İ.**, Wriggers, P. (2013). Computational Thermal Homogenization of Concrete. *Cement & Concrete Composites*, 35:59-70.
 19. Budt, M., **Temizer, İ.**, Wriggers, P. (2012). A Computational Homogenization Framework for Soft Elastohydrodynamic Lubrication, *Computational Mechanics*, 49:749-767.
 18. **Temizer, İ.** (2012). A Mixed Formulation of Mortar-Based Frictionless Contact. *Comput. Methods Appl. Mech. Engrg.*, 223-224:173-185.
 17. **Temizer, İ.** (2012). On the Asymptotic Expansion Treatment of Two-Scale Finite Thermoelasticity. *Int. J. Eng. Sci.*, 53:74-84.
 16. **Temizer, İ.**, Wriggers, P., Hughes, T.J.R. (2012). Three-Dimensional Mortar-Based Frictional Contact Treatment in Isogeometric Analysis with NURBS. *Comput. Methods Appl. Mech. Engrg.*, 209-212:115-128.
 15. De Lorenzis, L., **Temizer, İ.**, Wriggers, P., Zavarise, G. (2011). A large deformation frictional contact formulation using NURBS-based isogeometric analysis. *Int. J. Numer. Meth. Engrg.*, 87:1278-1300.
- [The following works were completed during post-doctoral research.]**
14. **Temizer, İ.**, Wriggers, P., Hughes, T.J.R. (2011). Contact Treatment in Isogeometric Analysis with NURBS. *Comput. Methods Appl. Mech. Engrg.*, 200:1100-1112.
 13. Ma, J., **Temizer, İ.**, Wriggers, P. (2011). Random homogenization analysis in linear elasticity based on analytical bounds and estimates. *Int. J. Solid Struct.*, 48:280-291.
 12. **Temizer, İ.** (2011). Thermomechanical Contact Homogenization with Random Rough Surfaces and Microscopic Contact Dissipation. *Tribology International*, 44:114-124.
 11. **Temizer, İ.**, Wriggers, P. (2011). Homogenization in Finite Thermoelasticity. *J. Mech. Phys. Solids*, 59:344-372.
 10. **Temizer, İ.**, Wriggers, P. (2011). An adaptive multiscale resolution strategy for the finite deformation analysis of microheterogeneous structures. *Comput. Methods Appl. Mech. Engrg.*, 200:2639-2661.
 9. **Temizer, İ.**, Wriggers, P. (2010). Inelastic analysis of granular interfaces via computational contact homogenization. *Int. J. Numer. Meth. Engrg.*, 84:883-915.

8. **Temizer, İ.**, Wriggers, P. (2010). Thermal contact conductance characterization via computational contact homogenization: A finite deformation theory framework. *Int. J. Numer. Meth. Engrg.*, 83:27-58.
7. **Temizer, İ.**, Wriggers, P. (2010). A micromechanically motivated higher-order continuum formulation of linear thermal conduction. *Z. Angew. Math. Mech.*, 90 (10-11): 768-782.
6. **Temizer, İ.**, Wriggers, P. (2008). On the computation of the macroscopic tangent for multiscale volumetric homogenization problems. *Comput. Methods Appl. Mech. Engrg.*, 198 (3-4): 495-510.
5. **Temizer, İ.**, Wriggers, P. (2008). A multiscale contact homogenization technique for the modeling of third bodies in the contact interface. *Comput. Methods Appl. Mech. Engrg.*, 198 (3-4): 377-396.
4. **Temizer, İ.**, Wriggers, P. (2008). On a mass conservation criterion in homogenization. *Journal of Applied Mechanics, Trans. ASME*, 75:054503.
3. **Temizer, İ.**, Wriggers, P. (2007). An adaptive method for homogenization in orthotropic nonlinear elasticity. *Comput. Methods Appl. Mech. Engrg.*, 196 (35-36):3409-3423.

[The following works were completed during MS/PhD research.]

2. **Temizer, İ.**, Zohdi, T. I. (2007). A numerical method for homogenization in non-linear elasticity. *Computational Mechanics*, 40 (2):281-298.
1. **Temizer, İ.**, Zohdi, T. I. (2005). Agglomeration and refragmentation in microscale granular flows. *International Journal of Fracture*, 131 (3):L37-L44.

Dissertations

2. Temizer, İ. (2005). *Homogenization in Linear and Non-Linear Elasticity*. PhD thesis, University of California, Berkeley, California (USA). (*Supervisor*: Prof. T. I. Zohdi)
1. Temizer, İ. (2003). *A Model for Aggregation in a Class of Granular Materials*. MS thesis, University of California, Berkeley, California (USA). (*Supervisor*: Prof. T. I. Zohdi)

Other Publications

Lecture Notes on Micromechanics and Homogenization (238 pages)

The lecture material, with Fortran and MATLAB codes for the accompanying exercises, is available for free download at <http://sourceforge.net/projects/multiscale> [more than **2,650** downloads since 27.07.2012].

Research Grants

[The following grants were obtained with Bilkent University affiliation.]

7. “*Hierarchical Isogeometric Analysis Technology and Computational Contact Mechanics*”
Funding Agency: TÜBİTAK – 1001 project (115M678)
Research Funds: 163,500 TL – 01.09.2015-01.09.2017 (24 months)
Status / Position: ongoing / principal (sole) investigator
6. “*Multiscale Analysis and Micro-Texture Design for Lubrication Interfaces*”
Funding Agency: TÜBİTAK – 1001 project (114M406)
Research Funds: 152,880 TL – 15.10.2014-15.04.2017 (30 months)
Status / Position: ongoing / principal (sole) investigator

5. “*MultiscaleFSI: Multiscale Fluid-Solid Interaction in Heterogeneous Materials and Interfaces*”
Funding Agency: EU-FP7 (European Union 7th Framework Programme) – Marie Curie CIG project
Research Funds: 100,000 EUR – 01.10.2012-01.10.2016 (4 years)
Status / Position: ongoing / principal (sole) investigator
4. “*Granular Contact Interfaces with Non-Circular Particles*”
Funding Agency: Michelin Tire Company
Research Funds: 12,000 EUR – 2011-2012 (6 Months)
Status / Position: completed / principal (sole) investigator
3. “*Thermomechanical homogenization techniques for metallic and polymeric microrough contact interfaces: theoretical foundations, numerical modelling and multiscale implementation*”
Funding Agency: TÜBİTAK – 3501 project (110M661)
Research Funds: 141,080 TL – 15.04.2011-15.10.2013 (30 months)
Status / Position: completed / principal (sole) investigator

[The following grants were obtained during post-doctoral research.]

2. “*Multiscale Contact Homogenization of Granular Interfaces*”
Funding Agency: DFG (German Research Foundation – WR 19/41)
Research Funds: 216,000 EUR – 2009-2012 (3 years)
Status / Position: completed / researcher (principal investigator: Prof. P. Wriggers)
1. “*Adaptive Multiscale Modeling and Analysis of Heterogeneous Materials*”
Funding Agency: DFG (German Research Foundation – WR 19/36)
Research Funds: 340,000 EUR – 2007-2013 (3+3 years)
Status / Position: completed / researcher (principal investigator: Prof. P. Wriggers)

Research Supervision

Graduate Students

[The following students are with Bilkent University affiliation.]

4. Müge Özcan (continuing). MS thesis, Bilkent University. (*Co-advisor:* Dr. M. Çakmakçı)
3. Abdullah Waseem (2016). *Homogenization-based Microscopic Texture Design and Optimization in Hydrodynamic Lubrication*. MS thesis, Bilkent University.

[The following students have external affiliation.]

2. Tao Wu (2014). *Multiscale Chemo-Thermal-Mechanical Modeling and Analysis of Concrete*. Ph.D. thesis, Leibniz Universität Hannover (Germany). (*Co-advisor:* Prof. P. Wriggers)
1. Michael Budt (2011). *Computational Homogenization Framework for Soft Elasto-Hydrodynamic Lubrication*. Ph.D. thesis, Leibniz Universität Hannover (Germany). (*Co-advisor:* Prof. P. Wriggers)

Undergraduate Students

4. Berkay Alp Çakal (continuing). UG Research, Bilkent University.
3. İbrahim N. Yıldırım (graduated in Spring 2016). *Homogenization in Hydrodynamic Lubrication: Microscopic Regimes and Non-Conventional Textures*. UG Research, Bilkent University. (*Co-advisor:* Dr. B. Çetin)

2. Karsu İpek Kılıç (graduated in Spring 2016 – now PhD student at Stanford University). *Tuning Macroscopic Sliding Friction at Soft Interfaces: Interaction of Bulk and Surface Heterogeneities*. UG Research, Bilkent University.
1. Gökberk Kabacaoglu (graduated in Spring 2014 – now PhD student at the University of Texas, Austin). *Homogenization-based Multiscale Modeling of Lubricated Interfaces*. UG Research, Bilkent University. *Note*: For this research, Gökberk has been awarded TÜBİTAK 2209/A undergraduate funding (2013).

Research Interests

Contrary to modelling macroscopic physical phenomena through phenomenological observations, I concentrate on lower-scale models that capture the essential physics and which interact to automatically display rich upper-scale behaviour, where the scale transition is achieved through computational homogenization. The three research fields in **computational mechanics** that define my prior and ongoing research experience in **multiscale and multiphysics modeling** are: (1) *volumetric homogenization* and (2) *interface homogenization*, the latter benefiting from (3) *isogeometric contact mechanics*. Specifically, I have concentrated on (i) applications to volumetric problems concerning rubber-like materials and soft porous tissues, as well as on (ii) interface problems involving granular media, soft matter friction, contact and lubrication.

Past and Present Research Collaborators

- Johann Guilleminot (Université Paris-Est, France)
- Stanisław Stupkiewicz (Institute of Fundamental Technological Research, Poland)
- Junji Kato and Kenjiro Terada (Tohoku University, Japan)
- Christian Hesch (Karlsruhe Institute of Technology, Germany)
- Mostafa Abdalla and Zafer Gürdal (Delft University of Technology, Netherlands)
- Thomas J. R. Hughes (University of Texas at Austin, USA)
- Peter Wriggers (Leibniz Universität Hannover, Germany)

Honors, Scholarly and Professional Activities, Achievements and Duties

Honors and Awards

- 2015** Mustafa Parlar Foundation Young Investigator Research Incentive Award
2015 Science Academy Distinguished Young Scientist Award (BAGEP)
2014 Visiting Professor Fellowship – Universite Paris-Est Marne-la-Vallee
2012 Marie Curie Career Integration Grant
2012 J.T. Oden Faculty Fellowship – University of Texas, Austin
2011 TÜBİTAK Career Program Grant
2001 Boğaziçi Üniversitesi (İstanbul, Turkey) – Graduation Class Rank 1

Scholarly and Professional Activities and Achievements

10. Invited stay (*visiting professor*) at the Laboratory for Multi-Scale Modeling and Simulation, Université Paris-Est Marne-la-Vallée. *Host*: J. Yvonnet and Q.C. He. (January 14-31, 2014)
9. Invited visit to the International Research Institute of Disaster Science, Tohoku University. *Host*: J. Kato and K. Terada (October 17, 2013)

8. 3rd International Conference on Computational Contact Mechanics (July 10-12, 2013), Lecce (Italy) – Member of the Scientific Committee
7. Hosted J. Kato and K. Terada from the International Research Institute of Disaster Science, Tohoku University (March 15, 2013)
6. ECCOMAS Young Investigators Conference (April 24-27, 2012), Aveiro (Portugal) – Member of the Scientific Committee
5. Invited stay (*visiting researcher*) at the Institute for Computational Engineering and Sciences, University of Texas at Austin. *Host*: T. J. R. Hughes. (January 11-31, 2012)
4. Travel award to the Abdus Salam International Centre for Theoretical Physics for the *Joint ICTP-FANAS Conference on Trends in Nanotribology (September 12-16, 2011), Trieste (Italy)*
3. *82nd GAMM Meeting (April 18-21, 2011), Graz (Austria)* – Young Researchers Minisymposium “Homogenization methods in multiscale modeling of heterogeneous materials” [Organizer: in cooperation with Swantje Bargmann]
2. *1st MUSIC Summer School (September 15-17, 2010), Hannover (Germany)* – “Multiscale and Multiphysics Modeling of Interfaces” [Organizer: in cooperation with Britta Hirschberger]
1. *3rd GACM Colloquium on Computational Mechanics (September 21-23, 2009), Hannover (Germany)* – “Mechanics of Heterogeneous Materials and Interfaces: Homogenization and FE²” [Organizer: in cooperation with Daniel Balzani]

Journal Reviewer Appointments

(*The year of first review is indicated in parantheses.*)

Computational Mechanics (2006), Applied Mathematical Modeling (2008), Computer Methods in Applied Mechanics and Engineering (2009), Tribology International (2010), International Journal for Numerical Methods in Engineering (2010), Entropy (2010), Advances in Engineering Software (2010), Mechanics Research Communications (2011), Mechanics Based Design of Structures and Machines (2011), International Journal of Heat and Mass Transfer (2012), International Journal of Solids and Structures (2013), International Journal of Computational Methods (2013), International Journal for Numerical Methods in Biomedical Engineering (2013), International Journal of Material Forming (2014), European Journal of Mechanics - A/Solids (2014), Computers and Mathematics with Applications (2014), Journal of Mechanical Engineering Science (2014), Materials and Structures (2015), Applied Mechanics Reviews (2015), Journal of Multiscale Computational Engineering (2016), Journal of Engineering Materials and Technology (2016)

(*The following journals are Open Access.*)

Frontiers in Computational Materials Science (2014), Advanced Modeling and Simulation in Engineering Sciences (2014)

Editorial Board Appointment Computational Mechanics (Assistant Editor since 2012)

Book Reviewer Appointments Springer (2012), Wiley (2012)

Membership in National and International Societies Gesellschaft für Angewandte Mathematik und Mechanik (GAMM), American Society for Mechanical Engineers (ASME), International Association for Computational Mechanics (IACM)

Teaching

(The teaching requirement at Bilkent University is 2 courses per semester. The semesters when 2 sections of the same course are taught instead are marked with †.)

Graduate Courses

ME501 Mathematical Techniques in Mechanical Engineering [Spring 2011, Fall 2011]

ME550 Continuum Mechanics [Fall 2010, Spring: 2013, 2014, 2015, 2016]

ME552 Finite Element Method [Spring 2011, Fall: 2013, 2015]

Undergraduate Courses

ME101 Introduction to Mechanical Engineering [Fall: 2010, 2011]

ME231 Mechanics and Materials I [Fall: 2012[†], 2013, 2014]

ME232 Mechanics and Materials II [Spring: 2012[†], 2013, 2014, 2015, 2016]

ME446 Applications of Solid Mechanics [Fall: 2014, 2015]

Teaching Experience Prior to Bilkent

LEIBNIZ UNIVERSITÄT HANNOVER (GERMANY): Post-Doctoral Researcher

Primary Instructor (Lecture and Exercise): *Micromechanics* (Summer 2010) [with Wenzhe Shan]

Primary Instructor (Lecture and Exercise): *Micromechanics* (Summer 2007)

Secondary Instructor (Exercise): *Contact Mechanics* (Winter 2006)

UNIVERSITY OF CALIFORNIA, BERKELEY (USA): Graduate Student Instructor

Introduction to the Finite Element Method (Fall 2004, Fall 2003, Fall 2002)

Finite Element Methods in Nonlinear Continua (Spring 2005)

Mechanical Behavior of Engineering Materials (Fall 2005, Fall 2001)

Methods of Tensor Calculus and Differential Geometry (Fall 2005)

Departmental and University Service

- Graduate Committee Membership
 - MS Thesis Committee:** E. Gülümser (23.12.2011), H. İ. Dokuyucu (02.08.2012), C. Birlik (04.09.2012), B. Sert (29.05.2014)
 - PhD Oral Exam:** S. Nadimi (ME, 01.06.2012), V. T. Kılıç (EE, 23.05.2013), G. B. Bayraktar (ME, 11.06.2014), M. Ghasabeh (ODTÜ-CE, 21.05.2015), H. Gülaşık (ODTÜ-AE, 24.05.2016)
 - PhD Thesis Committee:** S. Nadimi (ME), M. Ghasabeh (ODTÜ-CE)
- I have routinely been involved in departmental duties such as faculty search, curriculum review, lab equipment design and purchase, advising of undergraduates as well as ABET accreditation work.
- Departmental library representative (since Fall 2014)
- Member of the engineering faculty committee for the evaluation of MATH 101/102 (2012-2013 academic year) and MATH 101/102 & PHYS 101/102 course content (2015-2016 academic year)
- Departmental undergraduate program coordinator (since Fall 2014)
- Departmental exchange program coordinator (Fall 2010 - Spring 2014)
- Regularly presented the Mechanical Engineering Department to prospective students
- Departmental seminar series coordinator (since Spring 2014)
- Faculty Management Board (FYK) member as Assoc. Prof. (01.10.2015-30.09.2018)
- Member of Search Committee for the Dean of Faculty of Engineering (May-August 2016)

Invited Lectures and Talks

Keynote and Semi-Plenary Lectures

4. **[Keynote]** Temizer, İ. (May 25, 2015). Hierarchical NURBS in Frictionless Contact. *4th International Conference on Computational Contact Mechanics (May 27-29, 2015), Leibniz Universität Hannover (Germany)*.
3. **[Semi-Plenary]** Temizer, İ. (April 14, 2014). Computational Contact Mechanics: Isogeometric Analysis, Mortar Methods, Mixed Formulations. *Computational Engineering and Science for Safety and Environmental Problems (April 13-16, 2014), Sendai (Japan)*.
2. **[Keynote]** Temizer, İ. (March 29, 2012). Multiphysics Interface Homogenization in Granular and Fluid Film Lubrication. *EUROMECH Colloquium: New Trends in Contact Mechanics (March 27-31, 2012), Cargese, Corsica (France)*.
1. **[Keynote]** Temizer, İ. (June 15, 2011). Multiphysics Homogenization Techniques: Thermoelasticity and Lubrication. *2nd International Conference on Computational Contact Mechanics (June 15-17, 2011), Leibniz Universität Hannover (Germany)*.

Invited Talks

18. Temizer, İ. (February 23, 2016). Hierarchical NURBS in Frictionless Contact. *Institute of Applied Mathematics, Middle East Technical University, Ankara (Turkey)*.
17. Temizer, İ. (April 14, 2015). Computational Contact Mechanics: An Interplay between Finite Elements and Optimization. *Department of Mathematics, Bilkent University, Ankara (Turkey)*.
16. Temizer, İ. (November 28, 2014). Optimization in Computational Interface Mechanics. *Department of Industrial Engineering, Bilkent University, Ankara (Turkey)*.
15. Temizer, İ. (May 16, 2014). Hesaplamalı Temas Mekanikliği: İzogeometrik Analiz, Harç Metodları, Karma Yaklaşımlar. *Department of Mechanical Engineering, Trakya University, Edirne (Turkey)*.
14. Temizer, İ. (January 23, 2014). Computational Multiscale Tribology for Soft Interfaces. *Multiscale Modeling and Simulation Lab, Université Paris-Est Marne-la-Vallée (France)*.
13. Temizer, İ. (October 17, 2013). Soft Matter Friction: Multiscale Basis and Computational Aspects. *International Institute of Disaster Science, Tohoku University. Sendai (Japan)*.
12. Temizer, İ. (October 25, 2012). Thermodynamically- and Algorithmically-Consistent Nonlinear Homogenization Frameworks: Materials and Contact Interfaces. *Multiscale Modeling and Simulation Lab, Université Paris-Est Marne-la-Vallée. (France)*.
11. Temizer, İ. (July 20, 2012). Homogenization-based Multiscale Analysis of Materials and Interfaces. *SIMTECH Cluster of Excellence, University of Stuttgart (Germany)*.
10. Temizer, İ., (September 30, 2011) Mortar-Based Contact Treatment in Isogeometric Analysis with NURBS. *Department of Naval Architecture and Ocean Engineering, Seoul National University (South Korea)*.

9. Temizer, İ. (June 21, 2011). Mortar-Based Frictional Contact Treatment in Isogeometric Analysis with NURBS. *Institute of Aerospace Structures and Computational Mechanics, Delft University of Technology (Netherlands)*.
8. Temizer, İ. (June 29, 2010). Thermodynamics of Homogenization for Materials and Contact Interfaces at Finite Deformations. *Institute of Mechanics, TU München, Munich (Germany)*.
7. Temizer, İ. (June 24, 2010). Thermodynamics of Homogenization for Materials and Contact Interfaces at Finite Deformations. *Institute of Mechanics, TU Dortmund, Dortmund (Germany)*.
6. Temizer, İ. (February 19, 2010). Computational Contact Homogenization Techniques for Multiphysics Problems. *Department of Mechanical Engineering, Bilkent University, Ankara (Turkey)*.
5. Temizer, İ. (October 7, 2009). Computational Contact Homogenization Techniques for Multiphysics Problems. *Faculty of Engineering and Natural Sciences, Sabancı University, İstanbul (Turkey)*.
4. Temizer, İ. (April 29, 2009). Contact homogenization methodologies: Theoretical and numerical frameworks. *Institute of Mechanics, Army University, Munich (Germany)*.
3. Temizer, İ. (December 03, 2008). Strategies for the finite deformation analysis of microheterogeneous structures and systems: Multiscale aspects and adaptivity. *Department of Applied Mechanics, Chalmers University of Technology, Göteborg (Sweden)*.
2. Temizer, İ. (April 15, 2008). Multiscale Analysis Methodologies for Volumetric and Contact Homogenization Problems. *Department of Mechanical and Manufacturing Engineering, University of Calgary, Calgary (Canada)*.
1. Temizer, İ. (March 4, 2008). Multiscale Analysis Methodologies for Volumetric and Contact Homogenization Problems. *Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge (USA)*.

Invited Summer School Lectures

School of Multiscale Modelling of Materials and Structures (September 9-11, 2009), Zakopane (Poland): 18 × 45min invited lectures at the summer school organized by the University of Technology in Czestochowa and by the Section of Mechanics of Structures and Materials of the Committee for Civil Engineering of Polish Academy of Science [in cooperation with Varvara Kouznetsova and Stefan Löhnert]

Conference Presentations

(The presentation is held by the first person. Advised and co-advised student names are underlined.)

[The following talks are with Bilkent University affiliation.]

38. Waseem, A., Temizer, İ., Kato, J. and Terada, K. (June 8, 2016). Homogenization-Based Design and Optimization of Lubrication Interface Textures. *7th European Congress on Computational Methods in Applied Sciences and Engineering Mechanics (ECCOMAS) (June 5-10, 2016), Crete (Greece)*.
37. Temizer, İ., Waseem, A., and Kabacaoğlu, G. (October 13, 2015). Homogenization-Based Design and Optimization of Lubrication Interface Textures. *3rd International Workshops on Advances in Computational Mechanics (IWACOM) (October 12-14, 2015), Tokyo (Japan)*.

36. Temizer, İ. and Kabacaoğlu, G. (September 14, 2015). Homogenization of Soft Interfaces in Time-Dependent Hydrodynamic Lubrication. *11th European Conference on Numerical Mathematics and Advanced Applications (ENUMATH) (September 14-18, 2015), Ankara (Turkey)*.
35. Temizer, İ. and Kabacaoğlu, G. (April 27, 2015). Homogenization of Soft Interfaces in Time-Dependent Hydrodynamic Lubrication. *1st Pan-American Congress on Computational Mechanics (PANACM) (April 27-29, 2015), Buenos Aires (Argentina)*.
34. Temizer, İ. (February 25, 2015). Soft Interface Friction Across the Scales: Thermomechanical Interactions and Dissipation Partitioning. *EUROMECH Colloquium: Multi-scale computational methods for bridging scales in materials and structures (February 23-25, 2015), Eindhoven University of Science and Technology, Eindhoven (Netherlands)*.
33. Temizer, İ. (July 21, 2014). Homogenization of Soft Interface Friction: Isogeometric Framework and Elastic Boundary Layers. *11th World Congress on Computational Mechanics (WCCM) (July 20-25, 2014), Barcelona (Spain)*.
32. Temizer, İ., Abdalla, M. M. and Gürdal, Z. (June 16, 2014). An Interior Point Method for Isogeometric Contact. *17th U.S. National Congress on Theoretical & Applied Mechanics (USNCTAM) (June 15-20, 2014), Michigan (USA)*.
31. Temizer, İ. and Kabacaoğlu, G. (April 14, 2014). Homogenization-based Multiscale Modeling of Lubricated Interfaces. *Computational Engineering and Science for Safety and Environmental Problems (April 13-16, 2014), Sendai (Japan)*.
30. Kabacaoğlu, G. and Temizer, İ. (July 24, 2013). Homogenization-based Multiscale Modeling of Lubricated Interfaces. *12th U.S. National Congress on Computational Mechanics (USNCCM) (July 22-25, 2013), Raleigh (USA)*.
29. Temizer, İ. (July 23, 2013). Sliding Friction Across the Scales: Thermomechanical Interactions and Dissipation Partitioning. *12th U.S. National Congress on Computational Mechanics (USNCCM) (July 22-25, 2013), Raleigh (USA)*.
28. Wu, T., Temizer, İ. and Wriggers. (June 19, 2013). A Multiscale Method to analyze the deterioration due to Alkali Silica Reaction considering the effects of temperature and relative humidity. *V International Conference on Coupled Problems in Science and Engineering (June 17-19, 2013), Ibiza (Spain)*.
27. Temizer, İ. (October 22, 2012). Homogenization-based Scale Transitions in Finite Deformation Thermomechanics. *1st International Workshop on Physics Based Modeling of Material Properties and Experimental Observations (22-23 October 2012), Ankara (Turkey)*.
26. Temizer, İ. (September 12, 2012). Computational Multiscale Modeling of Thermomechanical Contact. *6th European Congress on Computational Methods in Applied Sciences and Engineering Mechanics (ECCOMAS) (10-14 September 2012), Vienna (Austria)*.
25. Hajibeik, N., Temizer, İ., Löhnert, S. and Wriggers, P. (September 12, 2012). Scale adaptivity for a multiscale analysis of composite substructures. *6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) (10-14 September 2012), Vienna, Austria*.

24. Weidlich, R., Temizer, İ. and Wriggers, P. (September 12, 2012). A three-dimensional homogenization technique for granular interfaces. *6th European Congress on Computational Methods in Applied Sciences and Engineering Mechanics (ECCOMAS) (10-14 September 2012), Vienna (Austria)*.
23. Wu, T., Temizer, İ. and Wriggers, P. (July 19, 2012). Multiscale Modeling of Alkali Silica Reaction Induced Damage in Concrete: Coupled Hydro-Chemical and Thermo-Mechanical Effects. *10th World Congress On Computational Mechanics (WCCM) (8-13 July, 2012), Sao Paolo (Brazil)*.
22. Temizer, İ. (April 27, 2012). Computational Contact Homogenization of Granular Interfaces. *1st ECCOMAS Young Investigators Conference (April 24-27, 2012), Aveiro (Portugal)*.
21. Wu, T., Temizer, İ. and Wriggers, P. (March 28, 2012). Computational Thermal Homogenization of Concrete. *83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (March 26-30, 2012), Darmstadt (Germany)*.
20. Hajibeik, N., Temizer, İ., Löhnert, S. and Wriggers, P. (September 22, 2011). Adaptive Multi-Scale Failure Analysis based on Error Estimation. *Composites 2011, 3rd ECCOMAS Thematic Conference on the Mechanical Response of Composites (September 21-23, 2011), Hanover (Germany)*.
19. Wu, T., Temizer, İ. and Wriggers, P. (September 8, 2011). A Method of Two-Scale Chemo-Thermal-Mechanical Coupling for Concrete. *XI International Conference on Computational Plasticity Fundamentals and Applications (September 7-9, 2011), Barcelona (Spain)*.
18. Hajibeik, N., Temizer, İ., Löhnert, S. and Wriggers, P. (April 19, 2011). Adaptive Multiscale Failure Analysis based on Error Estimation. *82nd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (April 18-21, 2011), Graz (Austria)*.
17. Wu, T., Temizer, İ. and Wriggers, P. (April 19, 2011). Computational Homogenization of Damage in the Hardened Cement Paste due to Alkali Silica Reaction. *82nd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (April 18-21, 2011), Graz (Austria)*.
16. Temizer, İ., Budt and M., Wriggers, P. (April 19, 2011). Homogenization in Finite Deformation Elastohydrodynamic Lubrication. *82nd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (April 18-21, 2011), Graz (Austria)*.
15. Temizer, İ., De Lorenzis, L., Wriggers, P. and Hughes, T.J.R. (January 15, 2011). Contact Treatment in Isogeometric Analysis with NURBS. *1st USACM Thematic Conference on Isogeometric Analysis (January 13-15, 2011), University of Texas, Austin (USA)*.

[The following talks were given during post-doctoral research.]

14. Budt, M., Temizer, İ. and Wriggers, P. (July 22, 2010). Analysis of Lubricated Contact with Rough Surfaces. *9th World Congress on Computational Mechanics (July 19-23, 2010), Sydney (Australia)*.
13. Temizer, İ. and Wriggers, P. (July 22, 2010). Multiscale Modeling of Thermal Conduction Through Heterogeneous Contact Interfaces. *9th World Congress on Computational Mechanics (July 19-23, 2010), Sydney (Australia)*.
12. Temizer, İ. and Wriggers, P. (May 21, 2010). Space-Time Homogenization of Inelastic Contact Boundary Layers. *IV European Conference on Computational Mechanics (ECCM) (May 16-21, 2010), Paris (France)*.

11. Temizer, İ. and Wriggers, P. (March 29, 2010). Homogenization Frameworks for Heterogeneous Contact Topographies. *2nd German-Japanese Workshop on Computational Mechanics (March 28-29, 2010), Yokohama (Japan)*.
10. Temizer, İ. and Wriggers, P. (March 24, 2010). Homogenization in Finite Thermoelasticity. *81st Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (March 22-26, 2010), Karlsruhe (Germany)*.
9. Temizer, İ. and Wriggers, P. (September 18, 2009). Computational thermal contact conductance characterization. *1st International Conference on Computational Contact Mechanics (September 16-18, 2009), University of Solento, Lecce (Italy)*.
8. Wriggers, P. and Temizer, İ. (July 18, 2009). On multi-scale methods in computational contact mechanics: Multiphysics homogenization methodologies. *10th U.S. National Congress on Computational Mechanics (USNCCM) (July 16-19, 2009), Columbus (USA)*.
7. Wriggers, P. and Temizer, İ. (June 14, 2009). Strategies for the finite deformation analysis of micro-heterogeneous structures and systems: Multiscale aspects and adaptivity. *Computational Multiscale Methods (June 14-20 2009), Mathematisches Forschungsinstitut Oberwolfach (Germany)*.
6. Temizer, İ. and Wriggers, P. (February 12, 2009). A contact homogenization framework for granular interfaces. *80th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (February 9-13, 2009), Gdańsk (Poland)*.
5. Temizer, İ. and Wriggers, P. (July 3, 2008). An adaptive multiscale resolution strategy for the analysis of microheterogeneous structures. *8th World Congress on Computational Mechanics (June 30 - July 4, 2008), Venice (Italy)*.
4. Temizer, İ. and Wriggers, P. (April 2, 2008). On the computation of the macroscopic tangent for multiscale volumetric homogenization problems. *79th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) (March 31 - April 4, 2008), Bremen (Germany)*.
3. Temizer, İ. and Wriggers, P. (July 23, 2007). A multiscale contact homogenization technique for the modeling of third bodies in the contact interface. *9th U.S. National Congress on Computational Mechanics (USNCCM) (July 23-26, 2007), San Francisco (USA)*.
2. Temizer, İ. and Wriggers, P. (May 8, 2007). A database approach to homogenization. *First Seminar on the Mechanics of Multifunctional Materials (May 7-10, 2007), Bad Honnef (Germany)*.
1. Temizer, İ. and Wriggers, P. (September 19, 2006). A numerical method for homogenization in isotropic and anisotropic nonlinear elasticity. *Third International Conference on Multiscale Materials Modeling (September 18-22, 2006), Freiburg (Germany)*.