

## Hüsnü DAL

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Çankaya, TR-06800  
Ankara, Turkey

- Education**
- **Ph.D.**, Institute of Structural Analysis, (10/2011)  
Dresden University of Technology, Germany  
Thesis: Approaches to the Modeling of Inelasticity and Failure of Rubberlike Materials  
Supervisor: Prof. Dr. M. Kaliske  
Co-supervisor: Prof. Dr. C. Miehe
  - **M.Sc.**, Computational Mechanics of Materials and Structures, (07/2005)  
University of Stuttgart, Germany  
Thesis: Approaches to Modeling of Thermoviscoplastic Behavior of Glassy Polymers  
Supervisor: Prof. Dr. C. Miehe, S. Göktepe, M.Sc.
  - **B.Sc.**, Civil Engineering, (06/2001)  
Middle East Technical University, Ankara, Turkey  
Specialization: Structural Mechanics

- Awards and Honours**
- Dresden University of Technology, Ph.D.  
Graduation with distinction: 1.0/1.0 " *summa cum laude*"
  - University of Stuttgart, M.Sc.  
Thesis: GPA 1.0/1.0
  - Middle East Technical University, B.Sc.  
Graduation with CumGPA 3.74/4.00 : High Honour Student
  - University Entrance Exam of Turkey, ÖSS 1997  
Ranked 273 out of ~1.500.000 students

- Academic Experience**
- 2001–present**
- Middle East Technical University (04/2014–present)  
*Assistant Professor*
  - University of Stuttgart (02/2012–03/2014)  
*Postdoctoral Research Associate* at Simtech Excellence Cluster of University of Stuttgart  
*Lecturer* at Institute for Applied Mechanics, Chair I
  - Swiss Federal Institute of Technology Zurich (08/2011–01/2012)  
*Postdoctoral Research Associate*
  - Dresden University of Technology (10/2006–07/2011)  
*Research Associate*
  - University of Leipzig (10/2005–09/2006)  
*Research Associate*
  - University of Stuttgart (10/2003–08/2005)  
*Student and administrative assistant* for international M.Sc. program  
Computational Mechanics of Materials and Structures
  - Middle East Technical University (11/2001–09/2003)  
*Research and Teaching Assistant*

## Teaching Experience

- Middle East Technical University, *Assistant Professor* (04/2014–present)
  - ME 547** Introduction to Continuum Mechanics, 3 Credits
  - MDM 517** Finite Element Analysis in Solids, 3 Credits
  - ME 410** Mechanical Engineering Systems Laboratory, 3 Credits
  - ME 210** Applied Mathematics for Mechanical Engineers, 3 Credits
  - ME 206** Strength of Materials, 3 Credits
  - ME 205** Statics, 3 Credits
- University of Stuttgart, *Lecturer* (02/2012–03/2014)
  - Fall 2012**, *Computational Mechanics of Materials*, 6 ECTS points  
Core course for Computational Mechanics of Materials and Structures Master students.
  - Spring 2013**, *Micromechanics of Materials and Homogenization Methods*, 6 ECTS points, Elective course for Computational Mechanics of Materials and Structures Master students.
  - Fall 2013**, *Computational Mechanics of Materials*, 6 ECTS points  
Core course for Computational Mechanics of Materials and Structures Master students.
- Middle East Technical University, *Teaching assistant* (11/2001–09/2003)
  - Spring 2003**, CE 384: Structural Analysis, 3 Credits  
Core course for junior civil engineering students
  - Fall 2002**, CE 483: Advanced Structural Analysis, 3 Credits  
Core course for senior civil engineering students in structural mechanics division
  - Spring 2002**, CE 102: Introduction for Civil Engineering  
Core course for freshman civil engineering students
  - Spring 2002**, CE 483: Advanced Structural Analysis, 3 Credits  
Core course for senior civil engineering students in structural mechanics division

## Theses Supervised

- M.Sc. Thesis on "*A Cahn-Hilliard type phase field model for intercalation dynamics in rechargeable battery systems*" by Yuan Zhao
- M.Sc. Thesis on "*A phase field model for the failure of artery walls: Application to rupture due to Aneurysm*" by Osman Gültekin
- M.Sc. Thesis on "*Intercalation induced stress generation in high performance Li-ion battery systems*", by Abbas Iftikhar
- B.Sc. Thesis on "*Biomechanik des Herzens: Einführung eines orthotropen-viskoelastischen Stoffgesetzes für das Herzgewebe*", by Sabine Kuznik
- M.Sc. Thesis on "*A Multiscale continuum damage model for cavity growth in rubberlike materials*", by Faik Baris Can Cansiz

## Funding Acquired

- "*Higher order Constitutive Models for NEMS/MEMS Microstructures*", 3 year TUBITAK 1001 Research Grant, ≈ ₺540,000
- "*Inelastic Fracture and Cavitation in Rubberlike Materials*", 3 year TUBITAK 3501 Career Award, ≈ ₺330,000
- "*A Phase-Field Model for Anisotropic Materials*", 2 year research scholarship from TUBITAK BIDEB 2232, ≈ ₺99,000
- "*Tailored Design of Epoxy/Glass Composites: Micromechanical Modelling and Two-Scale Simulation*", 3 year funding from German National Science Foundation, ≈ €200,000 written together with Gordon Geissler and Prof. Michael Kaliske
- "*Computational Electromechanics of the Heart: Development of FE-Based Predictive Simulation Tools for Patient Specific Analysis*", 3(+3) year funding from German National Science Foundation, ≈ €210,000 (× 2, in case of positive evaluation of the first period) written together with Prof. Michael Kaliske

- " *Thermomechanical Models for Amorphous Polymers Accounting for Shear Yielding and Crazing*", 3 year funding from German National Science Foundation,  $\approx$  € 230,000 co-applicant together with Prof. Christian Miehe

## Professional Activities

- Organization
  - Scientific Research Projects Coordinator at METU, since May 2017.
  - Organization of symposium " *Phase-Field Models for Cracking in Complex Materials*", 6th European Conference on Computational Mechanics (Solids, Structures and Coupled Problems) (ECCM 6) June 11–15, 2018, with C. Kuhn and M.A. Keip.
  - Organization of symposium " *New Aspects in Polymer Mechanics - Curing, Thermodynamics, Ageing and Durability*", 5th GACM Colloquium on Computational Mechanics, September 30 - October 2, 2013, with M. Johlitz.
  - Organization of Simtech graduate seminar " *Advanced scale bridging techniques towards computational material design*" on June 29 and July 20, 2012 with C. Linder and C. Miehe
  - Member of selection committee for Erasmus Mundus Master in Computational Mechanics Program, Universitat Politècnica de Catalunya Barcelona Tech
- Affiliations
  - European Mechanics Society (EUROMECH)
  - Gesellschaft für Angewandte Mathematik und Mechanik (GAMM)
  - Chamber of Civil Engineers, Ankara, Turkey
- Reviewer for
  - International Journal of Nonlinear Mechanics
  - International Journal for Numerical Methods in Biomedical Engineering
  - Computer Methods in Biomechanics and Biomedical Engineering
  - Tire Science and Technology
  - Simulation: Transactions of the Society for Modeling and Simulation International
  - Journal of Solid State Electrochemistry

## Publications and Presentations

- 63 publications in total, thereof:
- 17 peer-reviewed journal papers
  - 43 peer-reviewed and non-peer reviewed conference papers/abstracts
  - 4 technical reports
- 30 presentations, thereof:
- 23 conference presentations
  - 2 keynote conference presentations
  - 5 invited talks

## Journal Publications

- J17 Gültekin, O. ; **Dal, H.**; Holzapfel, G.A. [2017]: *Numerical Aspects of Anisotropic Failure in Soft Biological Tissues Favor Energy-based Criteria: A Rate-dependent Anisotropic Crack Phase-field Model*. Computer Methods in Applied Mechanics and Engineering, accepted.
- J16 Cansiz, B. ; **Dal, H.**; Kaliske, M. [2017]: *Computational cardiology: the bidomain based modified Hill model incorporating viscous effects for cardiac defibrillation*. Computational Mechanics, doi: 10.1007/s00466-017-1495-z
- J15 **Dal, H.**; Zopf, C.; Kaliske, M. [2017]: *Micro-sphere based viscoplastic constitutive model for uncured green rubber* . International Journal of Solids and Structures, doi: 10.1016/j.ijsolstr.2017.09.013
- J14 **Dal, H.** [2017]: *Analysis of Gold Micro-beams with Modified Strain Gradient Theory* . Anadolu University Journal of Science and Technology A - Applied Sciences and Engineering 18, 663–681

- J13 Cansiz, B. ; **Dal, H.**; Kaliske, M. [2017]: *Computational cardiology: A modified Hill model to describe the electro-visco-elasticity of the myocardium*. Computer Methods in Applied Mechanics and Engineering 315, 434–466.
- J12 Gültekin, O. ; **Dal, H.**; Holzapfel, G.A. [2016]: *A phase-field approach to model fracture of arterial walls: Theory and finite element analysis*. Computer Methods in Applied Mechanics and Engineering 312, 542–566.
- J11 Miehe, C. ; **Dal, H.**; Schaezel, L.M. ; Raina, A. [2016]: *A phase-field model for chemomechanical induced fracture in lithium-ion battery electrode particles*. International Journal for Numerical Methods in Engineering 106,683–711
- J10 **Dal, H.**; Miehe, C. [2015]: *Computational electro-chemo-mechanics of lithium-ion battery electrodes at finite strains*. Computational Mechanics 55, 303–325.
- J9. Can Cansız, F. B.; **Dal, H.**; Kaliske, M. [2015]: *An orthotropic viscoelastic material model for passive myocardium: Theory and algorithmic treatment*. Computer Methods in Biomechanics and Biomedical Engineering 18, 1160–1172.
- J8. **Dal, H.**; Göktepe, S.; Kaliske, M.; Kuhl, E. [2013]: *A fully implicit finite element method for bidomain models of cardiac electromechanics*. Computer Methods in Applied Mechanics and Engineering 253, 323–336.
- J7. Fleischauer, R.; **Dal, H.**; Kaliske, M.; Schneider, K. [2012]: *A constitutive model for finite deformation of amorphous polymers*. International Journal of Mechanical Sciences 65, 48–63.
- J6. **Dal, H.**; Göktepe, S.; Kaliske, M.; Kuhl, E. [2012]: *A fully implicit finite element method for bidomain models of cardiac electrophysiology*. Computer Methods in Biomechanics and Biomedical Engineering 15,645–656.
- J5. Kaliske, M.; **Dal, H.**; Fleischhauer, R.; Jenkel, C.; Netzker, C. [2012]: *Characterization of fracture processes by continuum and discrete modelling*. Computational Mechanics 50, 303–320.
- J4. Netzker, C.; **Dal, H.**; Kaliske, M. [2010]: *An Endochronic Plasticity Formulation for Filled Rubber*. International Journal of Solids and Structures 47, 2371–2379.
- J3. **Dal, H.**; Kaliske, M. [2009]: *A micro-continuum-mechanical material model for failure of rubber-like materials: Application to ageing induced fracturing*. Journal of the Mechanics and Physics of Solids 57, 1340–1356.
- J2. **Dal, H.**; Kaliske, M. [2009]: *Bergström-Boyce model for nonlinear finite rubber viscoelasticity: Theoretical aspects and algorithmic treatment for FE method*. Computational Mechanics 44, 809–823.
- J1. Näser, B.; Kaliske, M.; **Dal, H.**, Netzker, C. [2009]: *Fracture mechanical behaviour of visco-elastic materials: Application to the so-called dwell-effect*. Zeitschrift für Angewandte Mathematik und Mechanik 89, 677–686.

**Conference Proceedings**

- C43 Kandaz, M.; **Dal, H.**; Ünlü, M. [2017]: *Analysis of Gold Microbeams with Higher Order Continuum Theories* Proceedings in Applied Mathematics and Mechanics, accepted.
- C42 **Dal, H.**; Gültekin, O.; Aksu Denli, F.; Holzapfel, A.G. [2017]: *Phase-Field Models for the Failure of Anisotropic Continua* Proceedings in Applied Mathematics and Mechanics, accepted.
- C41 **Dal, H.**; Rodoplu, B. [2017]: *A Quasi-inextensible and Quasi-incompressible Finite Element Formulation for Transversely Anisotropic Hyperelastic Solids and Soft Biological Tissues* XIV International Conference on Computational Plasticity. Fundamentals and Applications COMPLAS XIV, E. Onate, D.R.J. Owen, D.Peric & M.Chiumenti (Eds).

- C40 Gültekin, O.; **Dal, H.**; Holzapfel, A.G. [2017]: *Crack Phase-Field Modeling of Anisotropic Rupture in Fibrous Soft Tissues* XIV International Conference on Computational Plasticity. Fundamentals and Applications COMPLAS XIV, E. Onate, D.R.J. Owen, D.Peric & M.Chiumenti (Eds) 139–150.
- C39 **Dal, H.**; Badienia Y.; Açıköz, K.; Aksu Denli, F. [2017]: *A Novel Parameter Identification Toolbox for the Selection of Hyperelastic Constitutive Models from Experimental Data* Proceedings of the 7th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry October 11-13, 2017 in Stuttgart, Germany
- C38 **Dal, H.**; Badienia Y.; Açıköz, K.; Aksu Denli, F. [2017]: *A Novel Parameter Identification Toolbox for the Selection of Hyperelastic Constitutive Models from Experimental Data* Proceedings of the 7th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry October 11-13, 2017 in Stuttgart, Germany
- C37 Nateghi A.; **Dal, H.**; Keip, M.A.; Miehe, C. [2017]: *Affine Full Network Model for Strain-Induced Crystallization in Rubbery Polymers* Proceedings of the 7th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry October 11-13, 2017 in Stuttgart, Germany
- C36. **Dal, H.** [2016]: *Electro-Chemo-Mechanics and Fracture of Li-ion Battery Electrodes*. Colloquium "Multiscale phenomena in electrochemical and porous systems", organized by F. Theil & M. Icardo, Mathematics Institute, The University of Warwick.
- C35. Gültekin, O.; **Dal, H.**; Holzapfel, A.G. [2016]: *A Phase-Field Approach to Model Fracture of Arterial Walls*. European Congress on Computational Methods in Applied Sciences and Engineering 2016, Book of Abstracts, ID 7606.
- C34. **Dal, H.** [2016]: *A quasi-inextensible element formulation for anisotropic continuum*. European Congress on Computational Methods in Applied Sciences and ENgineering 2016, Book of Abstracts, ID 12407.
- C33. **Dal, H.** [2015]: *Computational Modeling of Multi-physics Phenomena in Lithium-Ion Battery Electrodes*. European Conference on Numerical Mathematics and Advanced Applications, Book of Abstracts, 32
- C32. Cansiz, B.; **Dal, H.**; Kaliske, M. [2014]: *Fully Coupled Cardiac Electromechanics with Orthotropic Viscoelastic Effects* Procedia {IUTAM}, 12, 124-133
- C31. Cansiz, B.; **Dal, H.**; Kaliske, M. [2014]: *Computational modeling of cardiac tissue with strongly coupled electromechanics and orthotropic viscoelastic effects*. Proceedings in Applied Mathematics and Mechanics 14, 119–120.
- C30. Miehe, C.; Schänzel, L.; Ulmer, H.; **Dal, H.** [2013]: *Phase Field Modeling of Brittle and Ductile Fracture at Finite Strains. Formulation of Failure Criteria and MultiPhysics Extensions*. The Third International Conference on Computational Modeling of Fracture and Failure of Materials and Structures, 5-7 June 2013, Prague.
- C29. Can Cansiz F. B.; **Dal, H.**; Kaliske, M. [2013]: *Computational Viscoelastic Modelling of Passive Myocardium*. 5th GACM Colloquium on Computational Mechanics, TU Hamburg-Harburg, September 30 - October 2, 2013, Hamburg.
- C28. **Dal, H.**; Can Cansiz F. B.; Miehe, C. [2013]: *Modeling Cavity Growth in Rubberlike Materials*. 5th GACM Colloquium on Computational Mechanics, TU Hamburg-Harburg, September 30 - October 2, 2013, Hamburg.
- C27. **Dal, H.**; Miehe, C. [2013]: *Coupled chemomechanics and phase field modelling of failure in electrode materials of Li-ion batteries*. Proceedings in Applied Mathematics and Mechanics 13, 207–208.
- C26. **Dal, H.**; Can Cansiz F. B.; Miehe, C. [2013]: *A multiscale continuum damage model for cavity growth in rubberlike materials*. Constitutive Models for Rubber VIII, 183–189.

- C25. **Dal, H.** [2013]: *A Phase field model for the de-intercalation induced failure in rechargeable Li-ion batteries*. Euromech 545: Frontiers in Finite Deformation Electromechanics, May 21–24, 2013, Dortmund, Germany.
- C24. Schänzel, L. M.; **Dal, H.**; Miehe, C. [2013]: *On micromechanically-based approaches to failure in polymers*. Proceedings in Applied Mathematics and Mechanics 13, 557–560.
- C23. Schänzel, L. M.; **Dal, H.**; Miehe, C. [2013]: *Phase field modeling of fracture in rubbery polymers*. Constitutive Models for Rubber VIII, 335–341 .
- C22. Fleischhauer, R.; **Dal, H.**; Kaliske, M. [2012]: *Numerical aspects on computational homogenization of epoxy/glass composites*. Proceedings in Applied Mathematics and Mechanics 12, 425–426.
- C21. Schänzel, L. M.; **Dal, H.**; Miehe, C. [2012]: *A New Continuum Approach to the Coupling of Shear Yielding and Crazing with Fracture in Glassy Polymers*. Proceedings in Applied Mathematics and Mechanics 12, 337–338.
- C20. Kaliske, M.; Özenc, K.; **Dal, H.** [2012]: *Aspects of crack propagation in small and finite strain continua*. in Jerrams, S.; Murphy, N. (Editors): *Constitutive Models for Rubber VII*, 137–142. Taylor & Francis Group, London.
- C19. Behnke, R.; **Dal, H.**; Kaliske, M. [2012]: *An extended tube model for thermo-viscoelasticity of rubberlike materials: theory and numerical implementation*. in Jerrams, S.; Murphy, N. (Editors): *Constitutive Models for Rubber VII*, 87–92. Taylor & Francis Group, London.
- C18. **Dal, H.**; Kaliske, M.; Zopf, C. [2012]: *Theoretical and numerical modelling of unvulcanized rubber*. in Jerrams, S.; Murphy, N. (Editors): *Constitutive Models for Rubber VII*, 99–106. Taylor & Francis Group, London.
- C17. Behnke, R.; **Dal, H.**; Kaliske, M. [2011]: *An Extended Tube Model for Thermo-Viscoelasticity of Rubberlike Materials: Parameter Identification and Examples*. Proceedings in Applied Mathematics and Mechanics 11, 353–354.
- C16. **Dal, H.**; Göktepe, S.; Kaliske, M.; Kuhl, E. [2011]: *A Three-Field, Bi-domain Based Approach to the Strongly Coupled Electromechanics of the Heart*. Proceedings in Applied Mathematics and Mechanics 11, 931–934.
- C15. Fleischhauer, R.; **Dal, H.**; Kaliske, M. [2010]: *Micromechanical modelling and two-scale simulation of epoxy/glass composites with interphases and interfaces*. Proceedings in Applied Mathematics and Mechanics 10, 407–408.
- C14. **Dal, H.**; Kaliske, M. [2010]: *Micro-sphere based formulation of yield surface free viscoplasticity with nonlinear kinematic hardening: Application to unvulcanized rubber*. 16th US National Congress of Theoretical and Applied Mechanics, June 27–July 2, 2010 State College, PA, USA.
- C13. **Dal, H.**; Kaliske, M.; Hickmann, R.; Cherif, C.; Jurk, R.; Heinrich, G. [2010]: *Thermo-viscoelasticity of fibre reinforced rubbery polymers*. Proceedings in Applied Mathematics and Mechanics 10, 287–288.
- C12. **Dal, H.**; Kaliske, M. [2009]: *Failure Analysis of Solids*. ANSYS Conference & 27. CAD-FEM Users Meeting, Leipzig, CD-ROM.
- C11. **Dal, H.**; Kaliske, M.; Nasdala, L. [2009]: *A micro-continuum-mechanical material model for failure of rubber-like materials*. in Heinrich, G.; Kaliske, M.; Lion, A.; Reese, S. (Editors): *Constitutive Models for Rubber VI*, 401–407. Taylor & Francis Group, London.
- C10. **Dal, H.**; Kaliske, M. [2009]: *Failure analysis of elastomers within the framework of continuum mechanics*. 12. Problemseminar "Deformation und Bruchverhalten von Kunststoffen", Merseburg, CD-ROM.
- C9. **Dal, H.**; Kaliske, M. [2008]: *A Micromechanical model for failure analysis of rubber-like materials*. World Congress on Computational Mechanics, Venice, CD-ROM.

- C8. **Dal, H.**; Kaliske, M. [2008]: *A micro-macro approach to the failure of rubber-like materials*. Proceedings in Applied Mathematics and Mechanics 8, 10413-10414.
- C7. Morgner, C.; Kaliske, M.; Näser, B.; **Dal, H.** [2007]: *Numerical determination of the energy release rate for endochronic plastic material*. 2nd GACM Colloquium on Computational Mechanics, TU Munich.
- C6. Näser, B.; Kaliske, M.; **Dal, H.** [2007]: *Fracture mechanical behaviour of visco-elastic materials*. Proceedings in Applied Mathematics and Mechanics 7, 1090103–1090104.
- C5. Näser, B.; **Dal, H.**; Kaliske, M. [2007]: *Formulierung und Simulation bruchmechanischer Eigenschaften viskoelastischer Werkstoffe* 11. Problemseminar "Deformation und Bruchverhalten von Kunststoffen", Halle, CD-ROM.
- C4. Kaliske, M.; **Dal, H.**; Näser, B.; Schmidt, J. [2007]: *Finite nonlinear viscoelastic modelling and fracture mechanical investigations*. ANSYS Conference & 25. CADFEM Users Meeting, Dresden, CD-ROM.
- C3. Kaliske, M.; Näser, B.; **Dal, H.** [2007]: *Fracture of viscoelastic materials*. in Boukamel, A., L. Laiarinandrasana, S. Méo, E. Verron (Editors): *Constitutive Models for Rubber V*, 185–190. Taylor & Francis Group, London.
- C2. **Dal, H.**; Kaliske, M.; Nasdala, L. [2007]: *Computational aspects of Bergström-Boyce finite viscoelasticity model*. in Boukamel, A., L. Laiarinandrasana, S. Méo, E. Verron (Editors): *Constitutive Models for Rubber V*, 241–248. Taylor & Francis Group, London.
- C1. **Dal, H.**; Kaliske, M. [2006]: *An Approach to the Modeling of Physical Ageing in Rubbery Polymers*. Proceedings in Applied Mathematics and Mechanics 6: 363–364.

**Lecture Presentations**

**Dal, H.**; Badienia Y.; Açıkgöz, K.; Aksu Denli, F. [2017]: *A Novel Parameter Identification Toolbox for the Selection of Hyperelastic Constitutive Models from Experimental Data* 7th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry, October 11–13, Stuttgart, Germany

**Dal, H.** [2017]: *Recent Trends in the Modelling of Micromechanics and Failure* COMMAS Summer School, September 26–27, Stuttgart, Germany

**Dal, H.**; Rodoplu, B. [2017]: *A Quasi-inextensible and Quasi-incompressible Finite Element Formulation for Transversely Anisotropic Hyperelastic Solids and Soft Biological Tissues* XIV International Conference on Computational Plasticity. Fundamentals and Applications COMPLAS XIV, September 5–7, Barcelona, Spain.

**Dal, H.**; Gültekin, O.; Aksu Denli, F.; Holzapfel, A.G. [2017]: *Phase-Field Models for the Failure of Anisotropic Continua* 88th Annual Meeting of the International Association of Applied Mathematics and Mechanics, March 6–10, Weimar, Germany.

Kandaz, M.; **Dal, H.**; Ünlü, M. [2017]: *Analysis of Gold Microbeams with Higher Order Continuum Theories* 88<sup>th</sup> Annual Meeting of the International Association of Applied Mathematics and Mechanics, March 6–10, Weimar, Germany.

**Dal, H.** [2016]: *Electro-Chemo-Mechanics and Fracture of Li-ion Battery Electrodes*. Colloquium "Multiscale phenomena in electrochemical and porous systems", organized by F. Theil & M. Icardo, Mathematics Institute, The University of Warwick, Warwick, UK.

**Dal, H.** [2016]: *A quasi-inextensible element formulation for anisotropic continuum*. European Congress on Computational Methods in Applied Sciences and ENgineering 2016, June 5-10, Crete, Greece.

**Dal, H.** [2015]: *Computational Modeling of Multi-physics Phenomena in Lithium-Ion Battery Electrodes*. European Conference on Numerical Mathematics and Advanced Applications

**Dal, H.;** Miehe, C. [2013]: *Coupled chemomechanics and phase field modelling of failure in electrode materials of Li-ion batteries*. GAMM Annual Scientific Conference, March 18–22, 2013, Novi Sad, Serbia.

**Dal, H.;** Miehe, C. [2013]: *A multiscale continuum damage model for cavity growth in rubberlike materials*. Eighth European Conference for Constitutive Models for Rubber (ECCMR), June 25–28, 2013, San Sebastian, Spain.

**Dal, H.;** Miehe, C. [2013]: *A Phase field model for the de-intercalation induced failure in rechargeable Li-ion batteries*. Euromech 545: Frontiers in Finite Deformation Electromechanics, May 21–24, 2013, Dortmund, Germany.

**Dal, H.;** Kaliske, M.; Zopf, C. *Theoretical and numerical modelling of unvulcanized rubber*. Seventh European Conference for Constitutive Models for Rubber (ECCMR), September 20–23, 2011, Dublin, Ireland.

**Dal, H.;** Göktepe, S.; Kaliske, M.; Kuhl, E. *A Three-Field, Bi-domain Based Approach to the Strongly Coupled Electromechanics of the Heart*. GAMM Annual Scientific Conference, April 18–21, 2011, Graz, Austria.

**Dal, H.;** Kaliske, M. *Micro-sphere based formulation of yield surface free visco-plasticity with nonlinear kinematic hardening: Application to unvulcanized rubber*. 16th US National Congress of Theoretical and Applied Mechanics, June 27–July 2, 2010 State College, PA, USA.

**Dal, H.;** Kaliske, M.; Hickmann, R.; Cherif, C.; Jurk, R.; Heinrich, G. *Thermoviscoelasticity of fibre reinforced rubbery polymers*. GAMM Annual Scientific Conference, March 22–26, 2010, Karlsruhe, Germany.

**Dal, H.;** Kaliske, M. *Failure Analysis of Solids*. ANSYS Conference & 27. CADFEM Users Meeting, November 18–20, 2009, Leipzig, Germany.

**Dal, H.** *Theoretical and Numerical Aspects of Modeling Rubberlike Materials*. Middle East Technical University, September 29, 2009, Ankara, Turkey.

**Dal, H.;** Kaliske, M.; Nasdala, L. *A micro-continuum-mechanical material model for failure of rubber-like materials*. Sixth European Conference for Constitutive Models for Rubber (ECCMR), September 7–10, 2009, Dresden, Germany.

**Dal, H.;** Kaliske, M. *Thermo-visco-elasticity of fibre-reinforced elastomers at finite strains*. International Rubber Conference, 29 June - 2 July, 2009, Nürnberg.

**Dal, H.;** Kaliske, M. *Failure Analysis of Elastomers within the Framework of Continuum Mechanics*. 12. Problemseminar "Deformation und Bruchverhalten von Kunststoffen", Juni 24–26, 2009, Merseburg, Germany.

**Dal, H.** *Computational Approaches to Failure of Elastomers*. Finite-Elemente-Berechnungen, Materialmodelle, Verarbeitungssimulation und Bauteilberechnungen, Deutsches Institut für Kautschuktechnologie, 18–19 June 2008, Hannover, Germany.

**Dal, H.;** Kaliske, M. *A Micromechanical model for failure analysis of rubber-like materials*. Eighth World Congress on Computational Mechanics (WCCM), 30 June - 4 July, 2008, Venice, Italy.

**Dal, H.;** Kaliske, M. *A micro-macro approach to the failure of rubber-like materials*. GAMM Annual Scientific Conference, 31 March–4 April, 2008, Bremen.

**Dal, H.;** Kaliske, M.; Nasdala, L. *Computational aspects of Bergström-Boyce finite viscoelasticity model*. Fifth European Conference for Constitutive Models for Rubber (ECCMR), September 4–7, 2007, Paris, France.

**Dal, H.;** Kaliske, M. *An Approach to the Modeling of Physical Ageing in Rubbery Polymers*. GAMM Annual Scientific Conference, March 27–31, 2006, Berlin, Germany.



**Dal, H.** [2011]: *Approaches to the Modeling of Inelasticity and Failure of Rubberlike Materials*, Ph.D. Thesis, Faculty of Civil Engineering, Dresden University of Technology, 132 pages.

**Dal, H.** [2005]: *Approaches to Modeling of Thermoviscoplastic Behavior of Glassy Polymers*, M.Sc. Thesis, Computational Mechanics of Materials and Structures, University of Stuttgart, 56 pages.

**Dal, H.;** Kaliske, M. [2005]: *Q1P0-Brick Element for Thermomechanical Analysis*, Leipzig Annual Civil Engineering Report 10 , 105-116