



Curriculum Vitae, Sharon Kao-Walter

Educations:

- 2011: **Docent**
2005: **PhD** at Blekinge Institute of Technology
1991: **Licentiate** of Tech. at LTH
1982: **Bachelor** of Science in Eng. Shanghai Jiao-Tong University

Employments:

- 2015: **Professor**
2006 - : **Unviersitetslektor**, Department of Mechanical Engineering, School of Engineering, Blekinge Institute of Technology.
1999-2005: **Part time lecturer and part time PhD student**, Dept. Mech. Eng. , BTH.
1991-1998: Development engineer, specialized on theoretical analysis of new materials, packages and constructions. Tetra Pak Material R&D AB
1986-1991: Guest researcher and doctoral student, Department of Solid Mechanics, Lund Institute of Technology.
1982-1986: University teacher in Mechanics and Solid mechanics, Shanghai Inst. of Electrical Power, China. Part times researcher in Shanghai Jiao-Tong University.

Visiting Researcher:

- 200502-05: Part time researcher at Malmö University to join research projects granted by VR and KKs.
2006 - : Guest Professor at Kunming University of Science and Technology (KUST)
2006: Visiting scholar at Peking University, China.
2007: Visiting scholar at University of Sydney, Australian.
2008: Visiting professor at Nanjing Forestry University, China.
2009: Visiting scholar at University of California at San Diego, USA.
2010: Part time guest researcher at iPACK/Royal Institute of Technology, Stockholm.
2011-2016: Oversea Scholar at Shanghai Second Polytechnic University (SSPU).

Project manager and co- manager of external grants:

- 1999-2006: Project "*Fracture Mechanics of Packaging Materials*" (financed partly by Tetra Pak 99-04, SCA 00-02, KKs 00-02, and 05-08).
2003- 2011: Project "*KUST*", Linnaeus-Palme teacher and student exchange project, (financed by SIDA).
2002- 2010: Representative of School of Engineering in the EXR board.
2006-2008: Project manager: International distance course of "*Introduction to sustainable Engineering*".

- 2007-2008: Planning project: "*The Property validation of the natural fibres for a sustainable society*", (granted by SIDA 08).
- 2008: Prestudy "packaging within healthcare and medicine" (granted by Blekinge forskningsråd).
- 2009-2010: Project "packaging in healthcare and medicine" (granted by Blekinge research council).
- 2009: Int. Coop. project "Introduce failure detection algorithms and development technique to PMS system", (granted by Shanghai Science and Technology committee).
- 2010-2011: project "Specialkonstruktionslösningar för tryggare seniorboende" (Granted by Länsförsäkringsbolagens Forskningsfond.)
- 2010: Planning project "Intelligenta Livsmedel Förpackning och nano-Material"(Granted by VINNOVA).
- 2011-: 3+1 double diploma project (granted by part of tuition fee)
- 2011-2012: Project "Packaging with dementia care" (granted by Blekinge research council).
- 2012-2020: L-P Teacher and student exchange project, (granted by Sida)
- 2011-2016: Oversea Scholar (granted by Shanghai Education department)
- 2012-2015: Project "INNOVAGE, Regional development policies in eco-independent living for the elderly", funded by European Union Regional Development funding within FP7.
- 2012-2015: Project "Applied Fracture Mechanics in Package openings", (granted by Tetra Pak)
- 2013-2015: Project: "The development of iMedBox", A.2 in iPack Phase-3. (granted by iPACK/KTH, VINN excellent center)
- 2014-2015: seed project: Package opening and tamper evident for aging people", (granted by iPACK/KTH, VINN excellent center)
- 2013-2014: ABB, two ordered research for creating the new experiment methods of different material behaviors.
- 2012-: teacher's training center for SSPU (Granted by SSPU)
- 2017-: teacher's training center for SSPU (Granted by KUST)
- 2013-1018: KKs Profile "**Model Driven Development and Decision Support – MD³S** for Sustainable Product-Service System Innovation" (granted by KKS, co-manager).
- 2015-2023: "*Advanced Die Structure Analysis*", supported by Volvo Cars.
- 2017-2019: "*Kortare ledtid genom avancerade verktygsstrukturer med fokus på plåtformning*", (granted by Vinnova FFI, co-manager)

Teaching Experiences:

- 2006: University pedagogical introduction course
- 2007: Postgraduate supervision Development.
- 1982-1986: Responsible for courses "Theoretical Mechanics" and "Strength of material" (about 10 hours/week).
- 1986-1991: Lab. assistant for course "Solid mechanics" (about 20 hours/year)
- 2002-now: Responsible and teacher for courses:
 "Advanced solid mechanics and FEM", (about 70 lecture hours/y)
 "Applied solid mechanics" (about 70 lecture hours/y)

“Fundamental Fracture Mechanics”, developed this doctoral/master course which is related to the current research fields (about 70 lecture hours/y)
Supervisor for 2-3 groups master degree examination works per year (about 60-90 hours/y)
“Project course for international students”, developed this Bachelor course which is related to the professional practices in Sweden.

- 2004-now: Building up the part of the solid mechanics laboratory.
2005 -2011: Teaching part of a master degree course “Computational Engineering”(about 30 hours/y)
2013-2017: Course responsible for “project course for exchange students” (about 20 hours/y)
2012-: Responsible for different cooperated education program between BTH and several Chinese universities.
2010-now: created and organized a double diploma program within Mechanical and Electrical Engineering, from student admission, marketing, course syllabus and translate course material to English for several related courses. (about 200 hours/y)

Company Experiences and company cooperation:

- 1991-1998: Development/Calculation Engineer at Tetra Pak R&D AB
2006-2008: “Invendea” own company.
1999-2014: Tetra Pak, ABB, Food Partner, Areff, Volvo, Länsförsäkringar, etc.
2015- Volvo Car Corporation

Supervisor to Doctoral students:

- 2003 -2008: Co-supervisor (principal responsible) of 1 doctoral student Etienne Mfoumou. (ready at 2008).
2008-: Co-supervisor (principal responsible) of 1 doctoral student Armando León who has been ready with Lic at 2011 and is working at ABB.
2012-: Principal Supervisor of 1 Industry doctoral student Eskil Andreasson (Tetra Pak)
2013-: Principal Supervisor of 1 doctoral student Rahul Reddy Katangoori.
2014-: Principal Supervisor of 1 doctoral student Shafiqul Md. Islam.
2015-: Principal Supervisor of 1 Industry doctoral student Johan Pilthammar (Volvo Cars).
2015-2016: Supervisor of post Doctors, Defeng Zhang, Rundong Wan, Wureguli Reheman
2015-2017: Supervisor of guest PhD students Lun Zhao, Yuchi Kang

Scholarships and Prizes:

- 1986-1991: Full Scholarship, Swedish Institute.
1989: SI Resestipendium (Nanjing Univ., Shanghai Jiao-Tong Univ.).
2002: Resestipendium (Moscow States Univ.), IVA.
1991-1999: Once the first and two times the second company prizes for the excellent innovation ideas at Tetra Pak.
2001: Scholarship from Swedish Innovation Centre SIC for the pre-study of a new product.
2003: Nominated by Venture cap for an excellent business plan.

2005: Financial support from 4M (a Blekinge regional organization) for developing the mechanical product that connects to health care.
2011-2016: Oversea scholar awarded by Shanghai Education Department.

Opponent, editorial board member, review of articles and conference organizer:

2010: Licentiate at Lund Institute of Technology
2011: PhD at Luleå Institute of Technology (member of committee board)
2013: PhD at Royal Institute of Technology (member of committee board)
2012-: Invited as editorial Board Members and Reviewer for *Int. J. of Mat. and Mech. Eng. (IJMME)*
2010-2015: reviewed of 8 articles for different International Journals.

201508: organized an international conference “5th B. Broberg Symposium on Mechanics of Materials”.

Invited seminars:

2005: Malmö University
2006, 10, 12: Kunming University of Science and Technology.
2006: Peking University, China.
2007: Beijing Tech. University. University of Duala, Univ. of Yaoundé, Cameroon
2007: University of Sydney.
2008: Nanjing Forestry University.
2009: California at San Diego, USA.
2011- 2017: Shanghai Second Polytechnic University (2-3 times a year)
2012, 13, 14: Shanghai Jiao Tong University
2013: University of Cap Town

Publications

Lic Thesis:

- Kao, H.R., “Crack growth initiation of a quarter notched 3PB Ductile specimen under high velocity impact”, *Licentiate thesis*, LUTFD2/(TFHF-1011)/1-10/1991, Lund Institute of Technology(1991).
Supervisor, Prof. B. Broberg, Dr. A. Bergmark

PhD Thesis:

- Kao-Walter, S., “On the Fracture of Thin Laminates“, PhD Thesis, Blekinge Institute of Technology, *Dissertation Series No. 2004:07*, ISSN 1650-2159, ISBN 91-7295-048-X, Sweden(2005)
Supervisor: Prof. P. Stähle, Prof. G. Broman

Journal articles:

1. Chen, S.H., Wang, T.C. and Kao-Walter, S., “A crack perpendicular to a bimaterial interface an interface in finite solid”, *Int. J. of Solids and Structure*, 2731-2755, 40 (2003). *ISI*
2. Kao-Walter, S., Dahlström, J, Karlsson, T., and Magnusson, A., “A study of the relation between the mechanical properties and the adhesion level in a laminated packaging material“, *Mechanics of Composite Materials*, Vol. 40, No.1, (2004). *ISI*
3. Chen, S. H., Wang, T. C. and Kao-Walter S., “Finite boundary effects in problem of a crack perpendicular to and terminating at a bimaterial interface”.

- Acta Mech. Sinica*, Vol. 21, Nr.1, (2005). ISI
4. Kao-Walter, S., Stähle, P. and Chen, S.H., “A finite element analysis of a crack penetrating or deflecting into an interface in a thin laminate”. *Key Eng. Mat.* 173-178, Vol. 312 (2006). ISI
 5. Mfoumou, E., Hedberg, C., and Kao-Walter, S., "Static versus Low Frequency Dynamic Elastic Modulus Measurement of Thin Films", *Electronic Journal Technical Acoustics*, www.ejta.org, Vol. 17(2006).
 6. Zhang, Y.-F., Bai, S.-L., Yang D.-Y., Zhang Z. and Kao-Walter S., “Study on the viscoelastic properties of epoxy surface by nano dynamic mechanical analysis”, *Journal of Polymer Science: Part B: Polymer Physics*, Vol. 46, 281–288 (2008). VVC 2007 Wiley Periodicals, Inc. ISI
 7. Mfoumou, E., Hedberg, C., and Kao-Walter, S., "Vibration-based for Damage Detection and Evaluation of Sheet Materials using a Remote Acoustic Excitation”, *Acoustical Physics*, Vol. 54, No. 1, pp. 127–134(2008), ISSN 1063-7710, (© Pleiades Publishing, Ltd., 2007). *Akusticheski oe Zhurnal in Russian*, 2008, Vol. 54, No. 1, pp. 147–155. ISI
 8. Kao-Walter, S., Mfoumou, E. and Laksman, E., “Stress Relaxation of a Paper Sheet under Cyclic Load: An Experimental and Theoretical Model”, *Materials Sciences and Applications*, Vol.1, Issue 6, 317-322, (2010).
 9. Kao-Walter, S., Walter, M., Dasari, A. and Leon A., “Tearing and Delaminating of a Laminate”, *Key Eng. Mat.* Vol. 465, 169-174, (2011). ISI
 10. Kao-Walter S., Mfoumou E., Ndikontar M., “Mechanical Properties and Life-Cycle Sustainability Aspects of Natural Fibre”, *Advanced Materials Research*, Vol. 347-353, 1887-1893, (2012). ISI
 11. R. Katangoori, S. Kao-Walter, Z. You, “Conceptual study on an origami patterns of type I tapered square tub with and without a crack”, *Applied Mechanics and Materials*, Vol.275-277,184-188, (2012). ISI
 12. Md. Shafiqul Islam, Sharon Kao-Walter, Xin Chen and Hongyu Deng. “Innovation for and by the People with Disabilities: A Case Study in Improvement of the Manual Wheelchair”, *Advanced Material Research*, Vol.694-697, 3177-3182, (2013). ISI
 13. Md. S. Islam, A. Khan, S. Kao-Walter, J. Li, ”A Study of Shear Stress Intensity Factor of PP and HDPE by a Modified Experimental Method together with FEM”, World Academy of Science, *Eng. And Tech.* Val. 83, 919-924, (2013).
 14. E. Andreasson, N. Mehmood, M. Tan, S. Kao-Walter, “An Experimental, numerical and SEM study of fracture in a thin polymer film”, *Key Engineering Material*, Vol.592-593, 225-228, (2013). ISI
 15. Pang, Zhibo; Lirong, Zheng; Tian, Junzhe; Kao-Walter, Sharon; Dubrova, Elena; Qiang, Chen, “Design of a terminal solution for integration of in-home health care devices and services towards the Internet-of-Things”, *Enterprise Information Systems*, 9 (1), 86-116 (2013). ISI
 16. G. Yang, L. Xie, M. Mäntysalo, X. zhou, Q. Chen, X. L. Zhou, Z. Pang, L. D. Xu, S. Kao-Walter, Q. Chen, L.R: Zheng, “A Health-IoT Platform Based on the Integration of Intelligent Packaging, Unobtrusive Bio-Sensor and Intelligent Medicine Box" *IEEE Transactions on Industrial Informatics*, (2014). ISI
 17. J. Li., S. Kao-Walter, “The friction and wear properties of polypropylene composite filled with carbon fiber and polyamide 6”, *Journal of Thermoplastic*

Composite Material, ISSN: 0892-7057; E-ISSN: 1530-7980; DOI: <http://dx.doi.org/10.1177/0892705712461646>. *ISI*

18. E. Andreasson, S. Kao-Walter, P. Ståhle, "Micro-Mechanisms of a Laminated Packaging Material during Fracture", *Engineering Fracture Mechanics*, ISSN 0013-7944, E-ISSN 1873-7315, Vol. 127 (2014). *ISI*
19. Pilthammar, J., Sigvant, M., & Kao-Walter, S. "Introduction of elastic die deformations in sheet metal forming simulations. International Journal of Solids and Structures". <http://dx.doi.org/10.1016/j.ijsolstr.2017.05.009> (2017) *ISI*
20. H Chen, X Li, R Wan, S Kao-Walter, Y Lei, "A DFT study of the *electronic* structures and optical properties of (Cr, C) co-doped rutile TiO₂", *Chemical Physics*, 501, 60-67 (2018). *ISI*
21. H Chen, X Li, R Wan, S Kao-Walter, Y Lei, C Leng, "A DFT study on modification mechanism of (N, S) interstitial co-doped rutile TiO₂", *Chemical Physics Letters*, 695, 8-18 (2018). *ISI*
- 22.

Book Chapters:

23. Kao-Walter, S., Ståhle, P. and Hägglund, R., "Fracture toughness of a laminated Composite", in: *Fracture of Polymers, Composites and Adhesives II*, Elsevier, Oxford, UK, ISBN: 0-08-044195-5, (2002). *ISI*
24. Md. S. Islam, S. Kao-Walter, G. Yang, "Measuring Shear Fracture Toughness with a Modified Shear Test Specimen". *MATERIALS PERFORMANCE AND CHARACTERIZATION Volume: 5 Issue: 3 Published: (2016)* *ISI*

Peer reviewed Conferences:

25. S., Kao, "The dynamic behavior of the middle or side impact loaded 3-point bend specimen", Conf. Proceeding, *Joint FEEG/ICF Int. conf.*, Singapore (1991).
26. Kao-Walter, S., Ståhle, P., "Fracture behavior of an Ultra Thin Al-foil- Measuring and Modelling of the Fracture Process", Conf. Proc., *The third Int. Conf. on Exp. Mech.*, Oct.(2001), Beijing. *ISI*
27. Bjerken, C., Kao-Walter, S., Ståhle, P., "Fracture Mechanisms of a Thin Elastic Plastic Laminate", Peer reviewed. Conf. *Proceeding of ECF16*, Greece (2006).
28. Kao-Walter, S., Walter, M., Muhammadi, A.B., "Tensile and Tearing Fracture Behaviour of Food Packaging Laminate", the *3rd CHINA-EUROPE Symposium on PROCESSING AND PROPERTIES OF REINFORCED Polymers*, Budapest, Hungary (2007).
29. Ståhle, P., Bjerken, C., Tryding J. and Kao-Walter, S., "A Strong Toughening Mechanism in an Elastic Plastic Laminate", *Proceeding of 28th Riso Int. Symp. On Mater. Sci.*, Denmark (2007).
30. Mfoumou, E., Kao-Walter, S., Hedberg, C., "Remote Acoustic Monitoring of Thin Laminates", The 2nd World Congress on Engineering Asset Management (EAM) and The 4th *International Conference on Condition Monitoring*, London (2007).
31. Mfoumou, S., Hedberg, C., E., Kao-Walter, Narayanswamy, S., "A New Method of Acoustical Remote Evaluation of Defective Structures and Material Characterization", presented in *The Canadian Acoustic Association Annual Conference*, Montreal (2007).

32. Ståhle, Per ; Bjerken, Christina ; Tryding, Johan ; Kao-walter, Sharon ; Sørensen, Bent, “Strong Toughening Mechanisms in an Elastic Plastic Laminate” , *Risø International Symposium on Materials Science*, 2007
33. Kao-Walter, S., Levin, M.L., Petronyuk, J.S., Walter, M. “Acoustic imaging internal microstructure of a packaging material”, peer reviewed proceeding, *the XV Int. conf. on Mech. Of Comp. Mat.*, Riga (2008).
34. Armando Leon, Kjell Ahlin, Sharon Kao-Walter,” On Determining Instability Conditions for Stay Cables Subjected to Parametric Resonance”, The International Conference on Experimental Vibration Analysis for Civil Engineering Structures, EVACES'09, Wroclaw, Poland. (2009)
35. Sharon Kao-Walter, Min Hu, Mats F. Walter, Armando Leon, “A comparison of 2 - Zone and 3 - Zone Models in Tearing based on Essential Work of Fracture”, peer reviewed proceeding: *12th Int. conf. on fracture*, July, Ottawa (2009).
36. A. Leon, S. Kao-Walter, F. Jiang, K.S. Vecchio, “Finite element simulations on the determination of the dynamic stress intensity factor”, Int. ASTM/ESIS Symposium on Fatigue and Frac. Mech., Anaheim, USA (2012).
37. E. Andreasson, N. Mehmood, S. Kao-Walter, “Trouser tear tests of two thin polymer films”, *peer reviewed conf. proceeding*, 13th, Int. Conf. on Frac., June, (2013), Beijing.
38. N. Mehmood, E. Andreasson, Sharon Kao-Walter, “Experimental and Numerical Testing of cracks emanating from different flaws”, *Svenska Mekanikdaggar (SMD)*, Lund University, June, (2013).
39. E. Andreasson, N. Mehmood, S. Kao-Walter, “SEM observations of a metal foil laminated with a polymer film”, *20th European Conference on Fracture, ECF20*, Trondheim, (2014).
40. Md. S. Islam, S. Kao-Walter, G. Yang, “Measuring Shear Fracture Toughness with a Modified Shear Test Specimen”. *15th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics*, USA (2015).
41. J. Pilthammar, M. Sigvant and S. Kao-Walter, “Including die and press deformations in sheet metal forming simulations”, *Numisheet 2016*, Bristol, (2016)
42. Md. S. Islam, S. Kao-Walter, “Study of Shear Dominant Delamination in Thin Brittle-High Ductile Interface”, *ECF21*, Catania, (2016)
43. Zhang, De-Feng; Islam, Md. Shafiqul; Andreasson, Eskil; et al.”Modeling and Study of Fracture and Delamination in a Packaging Laminate”, Edited by: Jou, JH, *Proceedings of the 3rd International Conference on Material Engineering and Application (ICMEA)*, Shanghai, (2016)
44. Kao-Walter, S. Islam, Md.S., “Delamination in Flexible Laminates Loaded in Tension and Shear”, *ICF 14*, Rhodes, (2017)
45. Reheman, W., Ståhle P., Andreasson E. och Kao-Walter S., “Theoretical Analysis of Anisotropic Stiffness of Thin Al Foil Multiple Material Direction based on Experiment”, 30th Nordic Seminar on Computational Mechanics NSCM-30 R. Larsson (Ed.) (2017)

Others:

46. Sharon Kao-Walter, A Visit to M.V. Lomonosov Moscow State University (June 2002), Miscellaneous.

47. Kao-Walter, S. and Huang, Y., “From Friendship Provinces to University Teacher/student Exchange”, *The 15th Int. Conf. on Info. System Analysis & Synthesis 2009*, July, USA (2009).
48. Kao-Walter, S, Tryding, J., “Fracture mechanics of materials: From steel to packaging material”, *BROBERG SYMPOSIUM*, Dublin (2007). ISI

Educational materials:

49. Collected Compendiums, reorganized for “Applied Solid Mechanics” and “Advanced Solid mechanics” and most of the OH pictures both in English and in Swedish
50. Prepared part of the master course “Computational Engineering”
51. Designed FEM exercises together with teacher assistants.
52. Course plan for four courses.
53. Over forty examination documents for five different courses.