

PHD BY PUBLICATION

The influence of minimum stress on the fatigue life of non strain-crystallising elastomers

Abraham, Frank

Award date:
2002

Awarding institution:
Coventry University
Deutsches Institut für Kautschuktechnologie

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of this thesis for personal non-commercial research or study
- This thesis cannot be reproduced or quoted extensively from without first obtaining permission from the copyright holder(s)
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

**THE INFLUENCE OF MINIMUM
STRESS ON THE FATIGUE LIFE OF
NON STRAIN-CRYSTALLISING
ELASTOMERS**

Volume II - Appendix

by

Frank Abraham

A thesis submitted in partial fulfilment of the
University's requirements for the degree of
Doctor of Philosophy

December 2002

Coventry University
in collaboration with

List of publications and conference contributions

1. T. Alshuth and F. Abraham, "Strategies to Predict Dynamic Properties of Elastomer Products", *DKT 2000*, Nürnberg, DKG, September (2000)
2. F. Abraham, T. Alshuth, S. Jerrams, Poster: "Dependence of Fatigue Life of Elastomers on Stress Amplitude and Prestress", *Kautschuk Herbst Kolloquium 2000*, Hannover, DIK, 6.-8. November (2000) 405
3. T. Alshuth, F. Abraham, M. Klüppel, J. Schramm, "Fatigue Life of Elastomers - Parameter Influence, Criteria and FE-Applications" *DKG*, Hannover, December (2000), no paper
4. T. Alshuth, F. Abraham, "Fatigue Properties of Elastomers – Parameter Dependence and Criteria", *Rubber Symposium of the Countries on the Danube*, Budapest, 26-28 April (2001)
5. F. Abraham, T. Alshuth, S. Jerrams, "The Dependence on Mean Stress and Stress Amplitude of the Fatigue Life of Elastomers", *IRC 2001*, Birmingham, IOM, 12-14 June (2001)
6. F. Abraham, T. Alshuth, S. Jerrams, "Parameter Dependence of the Fatigue Life of Elastomers ", Conference: *Service Life Prediction of Elastomer Components*, London, IOM, 15 October (2001)
7. T. Alshuth, F. Abraham, S. Jerrams, "Parameter Dependence of the Fatigue Properties of Elastomer Products ", *Meeting of the Rubber Division, American Chemical Society*, Cleveland, Ohio, 16-19 October (2001)

8. F. Abraham, T. Alshuth, S. Jerrams, "Parameter Dependence of the Fatigue Life of Elastomers", Book: *Service Life Prediction of Elastomer Components*, London, IOM, 15 October (2001), accepted for publication
9. S. J. Jerrams and F. Abraham, "Predicting fatigue in non strain-crystallising rubbers", *Rubber Compounders and Processors Forum*, Midlands Plastic and Rubbers Group, The Institute of Materials, Burton College, 17th October (2001)
10. F. Abraham, T. Alshuth, S. Jerrams, "Ermüdungsbeständigkeit von Elastomeren – Einfluss der Spannungsamplitude und der Unterspannung", *KGK Kautschuk Gummi Kunststoffe*, Nr. 12/2001, 54. Jahrgang (2001) 643
11. F. Abraham, T. Alshuth and S. Jerrams, "The Dependence on Mean Stress and Stress Amplitude of the Fatigue Life of EPDM Elastomers", *Plastics, Rubber and Composites*, Vol. 30, No. 9 (2001) 421
12. F. Abraham, T. Alshuth "Lebensdauer von SBR- und EPDM-Elastomeren in Abhängigkeit der Vorkraft und der Kraftamplitude", *DKG Bezirksgruppe Rheinland-Westfalen*, Bad Neuenahr-Ahrweiler, DKG, 20-21 März (2002)
13. F. Abraham, T. Alshuth, S. Jerrams, "Parameterabhängigkeit und Kriterien der Ermüdung von Elastomeren", *Fortbildungsseminar: Bruchmechanik und Lebensdauer von Elastomeren*, Hannover, DIK, 25-26 März (2002)
14. T. Alshuth, F. Abraham, "Ermüdung von Elastomerwerkstoffen, Belastungsabhängigkeit und Kriterien", *IV. Hamburger Dichtungstechnisches Kolloquium – Dynamische Dichtungen*, TU Hamburg-Harburg, 23-24 Mai (2002)

- 15.F. Abraham, T. Alshuth, S. Jerrams, "The Dependence on Minimum Stress and Stress Amplitude of the Fatigue Life of Non Strain Crystallising Elastomers", EUROMECH Colloquium 438: *Constitutive Equations for Polymer Microcomposites: On the Border of Mechanics and Chemistry*, Vienna, 15-17 July (2002)
- 16.F. Abraham, T. Alshuth, S. Jerrams, "The Effect of Minimum Stress and Stress Amplitude on the Fatigue Life of Non Strain Crystallising Elastomers", *1. International Conference on Materials & Tribology 2002 (MT2002)*, Dublin, 12-13 September (2002)
- 17.A. Tabacović, S. Jerrams, B. Bowe, F. Abraham, "Surface Flaws in Elastomers and the use of Surface Treatments", *1. International Conference on Materials & Tribology 2002 (MT2002)*, Dublin, 12-13 September (2002)
- 18.T. Alshuth, F. Abraham, "Fatigue of Elastomers – Damage Criteria, Parameters for FEA-Calculation", *Internationale Fachtagung: Polymerwerkstoffe 2002*, Halle (Saale), 25-27 September (2002)
- 19.M. Bogun, F. Abraham, L. Muresan, R.H. Schuster, H.J. Radusch, "Continuous and Discontinuous Mixing under Aspects of the Material Quality", *Meeting of the Rubber Division, American Chemical Society*, Pittsburgh, Pennsylvania, 8-11 October (2002)
- 20.F. Abraham, T. Alshuth, "Ermüdungs- Rissfortschrittseigenschaften von verstärkten Elastomeren", *Kautschuk Herbst Kolloquium 2002*, Hannover, DIK, 30. Oktober - 1. November (2002) 405
- 21.F. Abraham, T. Alshuth, S. Jerrams, "Ermüdungsbeständigkeit von Elastomeren – Einfluss der Spannungsamplitude und der Unterspannung Teil 2", *KGK Kautschuk Gummi Kunststoffe*, Nr. 12/2002, 55. Jahrgang (2002) 674

22. T. Alshuth, F. Abraham, S. Jerrams, "Parameter Dependence of the Fatigue Properties of Elastomer Products", *Rubber Chemistry and Technology*, No.4, Vol. 75 (2002), 635