Christian Johannes Henry Clasen

. Born February 23rd 1973
German citizenship.

MIT, Room 3-253, 77 Massachusetts Avenue
Cambridge, MA 02139
617-253-0273, clasen@mit.edu

Education

Massachusetts Institute of Technology **Cambridge, MA (USA)**
Postdoctoral associate researcher in the *Department of Mechanical Engineering*, June 2001 – present. Build up of a new fluid micro-sample tester in cooperation with *DuPont*, Wilmington, DE (USA)

Universität Hamburg **Hamburg (Germany)**
Postgraduate study for the degree as a **Dr. rer. nat.** at the *Institut für Technische und Makromolekulare Chemie*, *Jan 1999 – Mar 2001*.
Undergraduate study for the **Diploma in Chemistry**, Oct. 1992 – Dec. 1998. Major in polymeric chemistry. Minor in law.

University of Wales **Bangor (UK)**
Research in the *Department of Chemistry*, *Mar 1996 – Jun 1996* as part of an *ERASMUS scholarship*. Synthesis of a new multimetallic organotransition-metal complex as a catalyst for alkene metathesis polymerization.

Awards

Scholarship from the *Studienstiftung des deutschen Volkes* (German National Educational Foundation) *Apr 1993 - Dec 1998*, *ERASMUS* scholarship *Mar 1996 – Jun 1996*, Member of *Sigma Xi* (MIT Chapter).

Reasearch Experience

MIT, Department of Mechanical Engineering **Cambridge, MA (USA)**
Advisor: Prof. Gareth McKinley
Postdoctoral associate in the Non-Newtonian Fluids Lab, *June 2001 – present*. Built a new fluid micro-sample and -gap tester (FMR) in cooperation with DuPont, Wilmington, DE (USA). Designed, assembled and programmed an appliance for stress tests on polymeric fluids in gaps down to 1 micron. Investigated the extensional rheology of complex fluids. Developement of a 1-D model of the necking in capillary break-up experiments on the basis of microscopic imaging of the self similar structure close to the singularity of the break-up point.

Universität Hamburg, Institut für Technische und Makromolekulare Chemie **Hamburg (Germany)**
Advisor: Prof. Dr.-Ing. W.-M. Kulicke
Postgraduate study for the degree as a **Dr. rer. nat.**, *Jan 1999 – Mar 2001*. Investigation of the gel formation in biopolymer solutions. Developed and built a new optical technique to clarify the gel formation in beer, funded by the *Wissenschaftsförderung der deutschen Brauwirtschaft,* Bonn (Germany).

University of Wales, Department of Chemistry **Bangor (UK)**
Advisor: Dr. Paul Baker
Mar 1996 – Jun 1996. Synthesis of a new multimetallic organotransition-metal complex as a catalyst for alkene metathesis polymerization.

Teaching and Work Experience

Medicoplan GmbH, Hamburg
Dec 1997 – Oct 1999. Scientific coordinator. Organized the indoor and outdoor sampling and analyzation of environmental toxins. Supervised up to five team members.

Institut für Technische und Makromolekulare Chemie, Hamburg
Aug 2000 – Sep 2000. Co-organizer of the "XXIII. Hamburger Makromolekurares Symposium" with 160 participants. Responsible for editing the proceedings, contacting and hosting the exhibiting companies and attendees.

Universität Hamburg
Mar 2000. Teaching Assistant in Rheology Seminars Series

Universität Hamburg
Oct. 1997 – May 1998. Tutor for first-semester undergraduate students in the Department of Chemistry, University of Hamburg. Coached and guided groups up to 15 students.

Publications

C. Clasen, W.-M. Kulicke, "A convenient way of interpreting steady shear rheo-optical data of semi-dilute polymer solutions", *Rheologica Acta* **40** 74-85 (2001).

C. Clasen, "Neue Charakterisierungsmöglichkeiten von supramolekularen Strukturen in Biopolymerlösungen mit rheo-optischen Methoden", Shaker Verlag, Aachen (2001).

C. Clasen, W.-M. Kulicke, „Determination of viscoelastic and rheo-optical material functions of water-soluble cellulose derivatives“ (review article), *Progress in Polymer Science*, **26** 1839-1919 (2001).

C. Clasen, W.-M. Kulicke, "Rheo-optical studies of barley (1→3)(1→4)-β-glucan solution: detection of the flow behaviour of aggregates in the sol state", *Journal of Rheology*, submitted (2002).

C. Clasen, "A new Flexure-based Microgap Rheometer (FMR). Case Study: Microrheology of Mayonnaise", Rheo-Future Young Scientist Award 2002, submitted (2002).

Presentations

„Determination of supramolecular structures of cellulosic derivatives in dilute and semidilute solutions“ *Symposium Cellulose und Celluslosederivates – molecular und supramoleculare strukture design* (Schwerpunktprogramm 1011 DFG), Jena (Germany), 13.-16. 10. 2002.

"A Sliding Plate Microrheometer for Monitoring Structure Evolution in Self-Assembling Peptide Solutions and Other Complex Biofluids", Proceedings of the *6th European Conference on Rheology* (eurheo 2002), 473-474 (2002), Erlangen (Germany), 1.-6. 9. 2002.

"A Sliding Plate Microrheometer for Small Sample Volumes and Narrow Gaps", *9th New England Workshop on Complex Fluids*, Havard, Cambridge MA (USA), 7. 12. 2001.

"Investigation of associated structures in solution with combined rheo-mechanical and rheo-optical measurements", Book of Abstracts, *2000 International Chemical Congress of Pacific Basin Societies* (Pacifichem 2000), Vol 1, MACR 0690 (2000), ISBN: 0-8412-3775-1, Honululu (USA), 14.-19. 12. 2000.

"Viscoelastic Properties and Orientation of Polymers in Solution" Proceedings of the *XIIIth International Congress on Rheology*, Vol 1, 387-389 (2000), ISBN: 0-9538904-0-6, Cambrigde (United Kingdom), 20.-25. 8. 2000.

"Rheo-optische Charakterisierung (Strömungsdoppelbrechung und –dichroismus) und Bestimmung der Orientierung von Polymerlösungen in Scherströmungen", *XXIII. Hamburger Makromolekulares Symposium*, Polymeranalytik, 47-49 (2000), ISBN: 3-82659-7819-8, Hamburg (Germany), 25.-26. 7. 2000.

"Combined rheomechanical and rheooptical studies on the solution properties of cellulosic derivatives", Abstracts of the *American Chemical Society 219th National Meeting* (ACS), Cellulose, Paper&Textile Division, Abstract No. 155, San Francisco (USA), 26.-30. 3. 2000.

"Rheo-optical and rheo-mechanical characterization of the viscoelastic properties and shear-induced orientation of hydrocolloids" (plenary lecture), Proceedings of the *2nd International Symposium on Food Rheology and Structure ISFRS*, 25-33(2000), ISBN: 3-905609-12-6, Zürich (Swiss), 13.-16. 3. 2000.

"(1,3)(1,4)-β-Glucane, Entwicklung eines neuen Sol-Gel-Übergangsmechanismus", Bericht über die *6. Tagung für Lebensmittelrheologie,* 185-195 (2000), Detmold (Germany), 8.-10. 7. 1999.

"Bestimmung der schergeschwindigkeitsabhängigen Orientierung von Polymersegmenten und Aggregaten mit Hilfe rheo-optischer Messmethoden", Verhandl. DPG (VI) 34, 45 (1999), ISSN: 0420-

0195, F*rühjahrstagung Leipzig 1999, Polymerphysik der DPG und Rheologentagung,* Leipzig (Germany), 1.-3. 3. 1999.

Invited Seminars

"Gels in Beer", Squishy Physics Seminar Series, Harvard , Cambridge MA (USA), 23. 1. 2002.

"Biopolymers in Solution – Rheo-mechanical and Rheo-optical Detection of Gels in Beer", Hatsopoulos Laboratory For Microfluid Dynamics Seminar Series, MIT, Cambridge MA (USA), 11.12.2001.

Posters

B. Gearing, C. Clasen, S. Gudlavalleti, L. Anand, G. McKinley, "Recent Developments in Mechanical Testing at the Small Scale", *1st Dupont-MIT Alliance Research Symposium*, Cambride, MA (USA), 23. 10. 2001.

M. Knarr, C. Clasen, W.-M. Kulicke, "Charakterisierung der Viskoelastizität und Gelbildung nativer Rohstoffe via rheo-mechanischer und rheo-optischer Methoden", *Rheologentagung der Deutschen Rheologischen Gesellschaft (DRG)*, Berlin (Germany), 14.-16. 5. 2001.

C. Seidel, C. Clasen, M. Knarr, M. Laschet, W.-M. Kulicke, "Kombinierte rheo-mechanische und rheo-optische Charakterisierung von ausgewählten Polysaccharid-Derivaten in Lösung", *7. Symposium Nachwachsende Rohstoffe für Chemie*, Dresden (Germany), 20.-22. 3. 2001.

C. Clasen, W.-M.Kulicke, "Characterization of Supermolekular Structures in Polymer Solutions with Rheo-optical Devices", *XIIIth International Congress on Rheology*, Cambrigde (United Kingdom), 20.-25. 8. 2000.

C. Clasen, W.-M. Kulicke, "Rheo-optische Untersuchungen zum Aggregations-verhalten von β-Glucanen im Bierbrauprozeß", *XXIII. Hamburger Makromolekulares Symposium, Polymeranalytik*, Hamburg (Germany), 25.-26. 9. 2000.

C. Clasen, N. Böhm, W.-M. Kulicke, "Gewinnung, molekulare Charakterisierung und Erfassung des rheologischen Eigenschaftsprofils von β-Glucanen", *Frühjahrstagung des Fachverbandes Polymerphysik der DPG und Rheologentagung*, Leipzig (Germany), 1.-3. 3. 1999.