

DeMaMech Exchange Program

Marko Kieroth

Name: **Marko Kieroth**
Period of stay: **October 2005 – July 2006**

Home University: **Technical University Berlin**
Department: **Dept. of Mechanical Engineering and Transport Systems**
Professor: **Prof. Dr.-Ing. Lucienne Blessing**

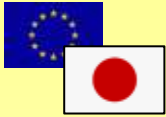
Host University: **Keio University**
Department: **Dept. of System Design Engineering**

1st Laboratory: **Laboratory for Manufacturing Science**
Professor: **Prof. Tojiro Aoyama**

2nd Laboratory: **Laboratory for Digital Design & Digital Manufacturing**
Professor: **Prof. Hideki Aoyama**

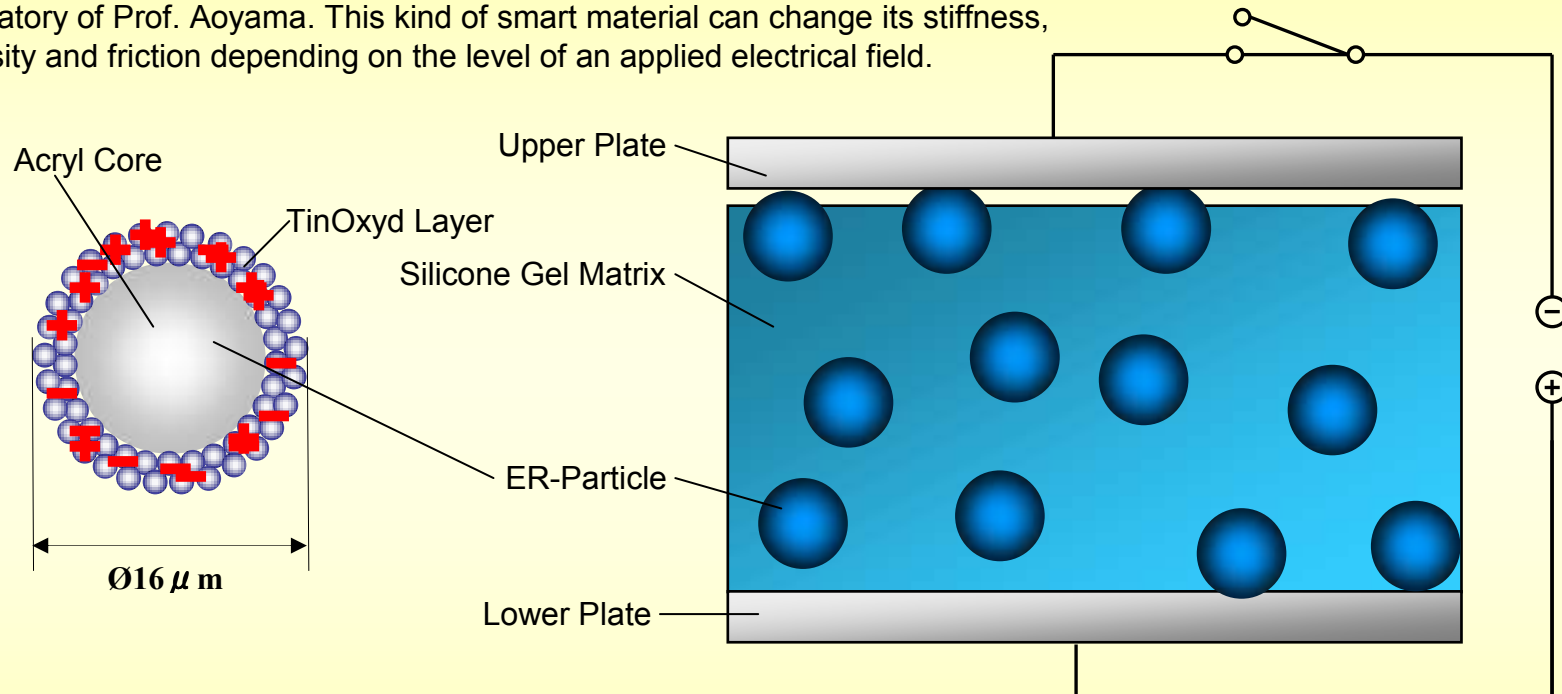


During my then month in Yokohama I joined to two laboratories, to work on two different projects. In and beside the University I learned a lot about the Japanese culture as well as my own. So it surely influenced my future view to the world. It was easy to make new friends. But it is difficult to hold contact over 15000 km. I hope to see them again when I return sometime. It will not be my last stay in Japan.



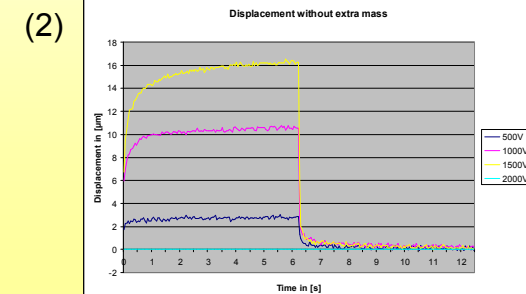
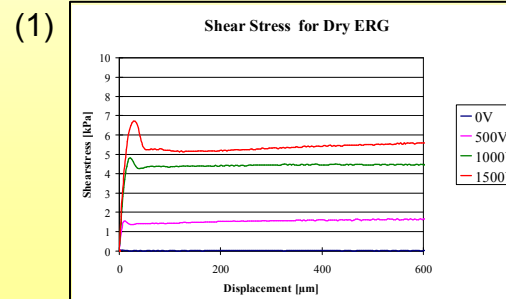
Basic Properties and Possible Applications of Electro Rheological Gel.

“Electro Rheological Gel” is a modern functional material, developed in the Laboratory of Prof. Aoyama. This kind of smart material can change its stiffness, viscosity and friction depending on the level of an applied electrical field.



Mesured Parameters:

- Friction of the ERG surface (1)
- Displacement of the upper plate (2)





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Evaluation System for Style Design Using Mixed Reality

This system allows making usability analyses in a very early stage of the design process, by overlaying a physical model made by a rapid prototyping machine with a virtual model in the mixed reality.

I had to execute the following tasks. :

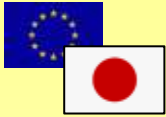
- Generate CAD-models of candidates of a future product
- Make STL-files from the CAD-models
- Produce a physical model of the typical model(rapid prototyping)
- Mix a CAD model and physical model
- Check the operability of the function to be developed and the, by operating the virtual model in the virtual space.



Lectures

“Advanced Course on Computer Graphics“
“Design and Production System”

– Prof. Ohno
– Prof. T. Aoyama& Prof H. Aoyama



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Exchange Student Life

