IAI
Institut für
Angewandte
Informatik

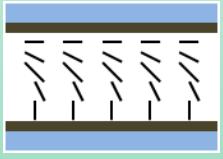
Karlsruhe Institute of Technology

Master thesis

Topic:

„Setup and test of light management structures based upon liquid crystals“

Task:



Currently, liquid crystals (LC) are mainly applied in displays. Thereby, they are used as light valves for the individual pixels of the display. But the controllable optical properties enable the use of LC for other light management structures for many different applications. Within a research project, new manufacturing techniques for the setup of LC light management structures are being investigated. One example are liquid crystal lenses. Within this master thesis, a new manufacturing technique shall be investigated for one process step – the alignment layer. An alignment is necessary since nematic LC is only optically active in one polarization direction of light. First tests of the new technique showed promising results.

The tasks in detail are:

- Familiarization with the topic on the basis of literature and previous results
- Theoretical consideration of electro-optical properties of a lens structure based upon liquid crystal
- Setup of samples for functional testing using structuring processes like etching, imprinting and assembly of the LC lenses
- Optical characterization of the LC lens samples using an existing setup, evaluation and documentation

You are studying engineering or science? You would like to work in an interesting R&D project? You want to get insights into an exciting research project and incorporate your own ideas? Then we are looking forward to your application!

Contact:

Dr.-Ing. Liane Koker
Institut für Angewandte Informatik (IAI)
Karlsruher Institut für Technologie, Campus Nord
Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen
phone: +49 (0)721 608-24143
fax: +49 (0)721 608-22602
eMail: liane.koker@kit.edu
Internet: www.iai.kit.edu