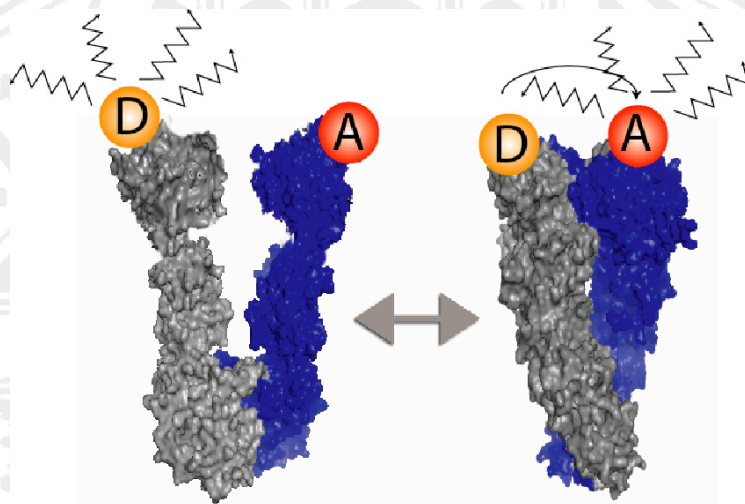


# PHYSIKALISCHES KOLLOQUIUM

AM 14. DEZEMBER 2015 UM 17 UHR C.T.

IM GROßEN HÖRSAAL



## MOLECULAR MACHINES: ENERGY CONVERSION WITH SINGLE POLYMERS AND PROTEINS

PROF. DR. THORSTEN HUGEL  
*INSTITUT FÜR PHYSIKALISCHE CHEMIE,  
UNIVERSITÄT FREIBURG*

Single molecule methods allow real time observation of molecular machines at work. Using AFM-based methods, we have shown how a single polymer can be used for opto-mechanical energy conversion. With single molecule Förster Resonance Energy Transfer (smFRET) we investigate more complex systems like the mechano-chemical cycle of the heat shock proteins yeast Hsp90 and bacterial Hsp90. These systems significantly differ in their mechanism of energy conversion.

Finally, I will focus on how energy conversion can be modified by additional components and how single molecule methods allow us to understand regulation of molecular machines.