

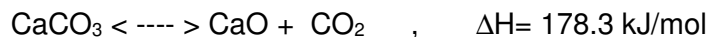


Erlangen, den **21. 04. 2017**

## PhD position: Imaging technologies and spectroscopy in photovoltaics and energy storage

The project is focused on the development of noninvasive thermographic imaging techniques for the study of materials, processes, and systems involved in photovoltaics and energy storage. The techniques include infrared imaging of thermal emission, active phosphor thermography relying on laser-excited luminescence in inorganic phosphors, and Raman thermometry, relying on the intensity ratio of stokes and antistokes emission.

In the course of the work the candidate will develop a thermographic setup for the measurement and visualisation of temperature distribution and heat flow between the heatpipes and storage media ( $\text{CaCO}_3$ ) in an experimental carbonate storage setup at the Energy Campus Nürnberg. Balancing the mismatch between the (solar) energy supply and demand. Thermal energy storage systems are necessary for improving the flexibility of the electricity grid. In carbonate-based systems the thermal energy storage and release happens during the reversible calcination/carbonation reaction



This reaction is driven by the  $\text{CO}_2$  partial pressure and temperature. The working temperature in the experimental reaction vessel is 1000 – 1200 K, it's storage capacity will be 500 kWh.

The position is limited to four years (TV-L 2/3 E13) and can start asap

### Requirments

- Master degree in physics, material science, chemistry or related subjects
- Experience in imaging and/or spectroscopy
- Very good scientific and technical understanding
- Experience in computer control and automation (Matlab, Labview, Python, C Sharp...) is appreciated, as well as
- Experience in laboratory work and experimental optics is appreciated

Please send your application via email to Mrs. Ulrike Knerr ([ulrike.knerr@fau.de](mailto:ulrike.knerr@fau.de))

Please refer to Dr. Andres Osvet ([andres.osvet@fau.de](mailto:andres.osvet@fau.de)) or Dr. Tobias Stubhan ([tobias.stubhan@fau.de](mailto:tobias.stubhan@fau.de)) for technical/scientific questions.