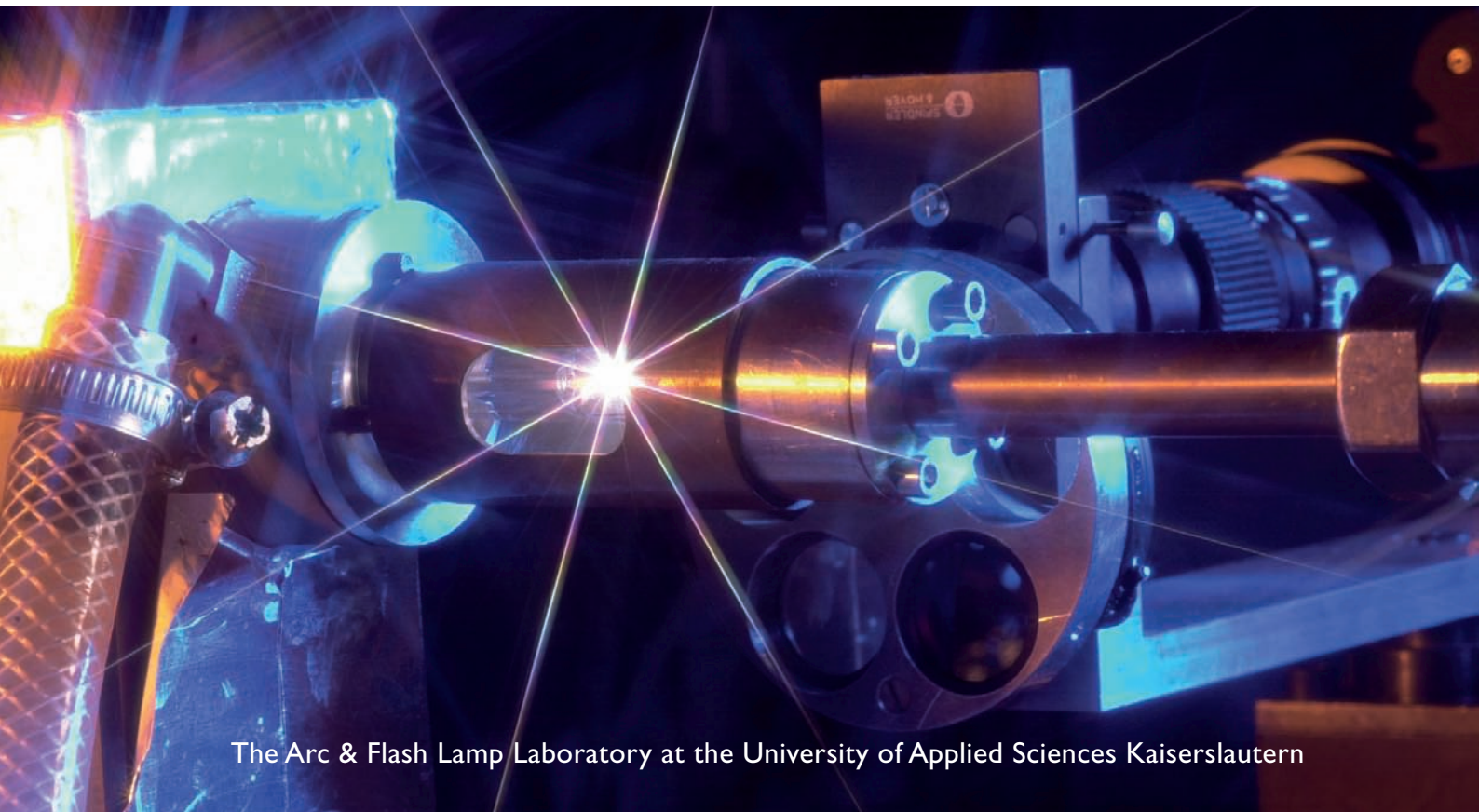




**Fachhochschule  
Kaiserslautern**

University of  
Applied Sciences



The Arc & Flash Lamp Laboratory at the University of Applied Sciences Kaiserslautern

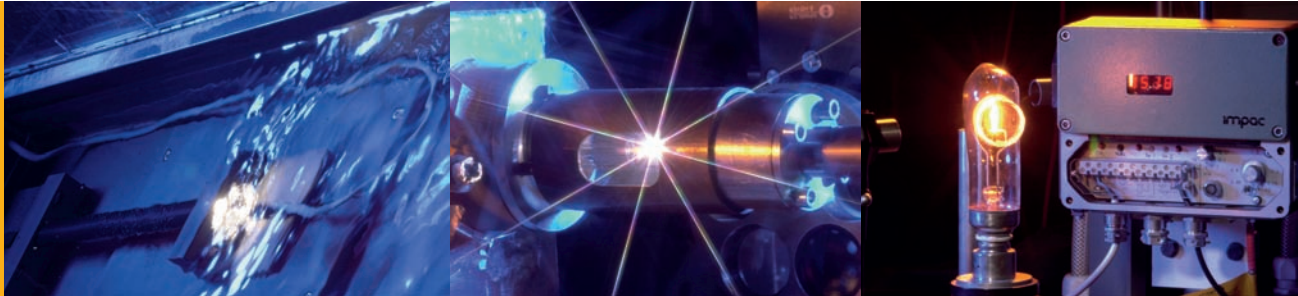
[www.fh-kl.de](http://www.fh-kl.de)

# Heraeus Arc & Flash Lamp Laboratory at FH Kaiserslautern

The Arc & Flash Lamp Laboratory was founded in 1997 for research in the area of laser excitation lamps with a grant by the German "Federal Ministry of Education and Research (BMBF)". Today, it is an integral part of the Department of Electrical Engineering and is exclusively funded by Heraeus Noblelight, a leading manufacturer of arc and flash lamps. This combination enables the laboratory to conduct both basic research into improvements of lamp technology and also application-driven projects with Heraeus customers which require strict confidentiality. Besides the pumping of solid-state lasers, non-laser applications using the UV and IR emissions of flash lamps play an increasingly important role in the laboratory. Please contact Heraeus Noblelight at [hnl-laserlamps@heraeus.com](mailto:hnl-laserlamps@heraeus.com) if you would like to receive more information about our unique laboratory.

## Special Equipment and Know-How

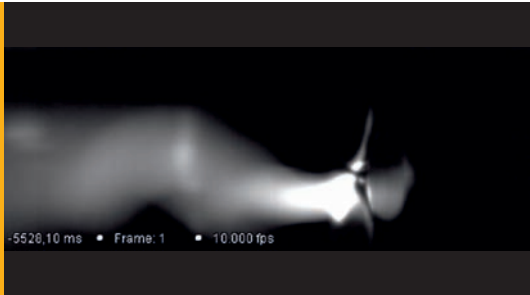
- Unique camera system for arc attachment analysis and temperature measurements
- High speed camera (up to 10,000 fps)
- Spectral analysis (UV to NIR)
- Life Test Equipment: Pulsed and CW (continuously operated for Heraeus)
- HF-equipment (Spectrum analyzer up to 1 GHz)
- Workshop facilities to design and build new equipment and invent measurement technologies (machine shop, electronic support unit)



## Fields of Expertise

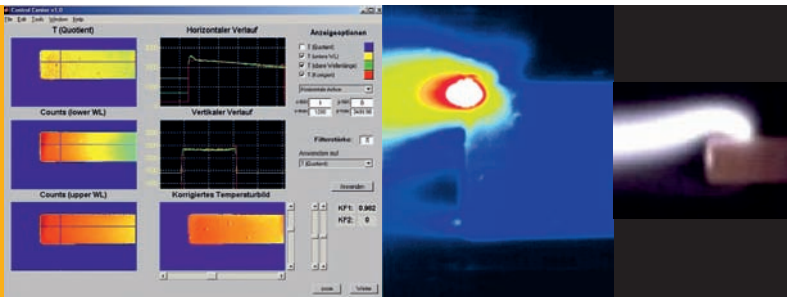
- Sophisticated temperature measurements (Electrode temperatures, time and space resolved)
- Systematic lifetime investigations (CW and Pulsed lamps)
- High speed photography (up to 10,000 fps or down to 100 $\mu$ s exposure time)
- Spectral analysis (200-1000nm fibre coupled spectrometer)
- Technical/ scientific consultancy and customer support

## A Few Selected Examples



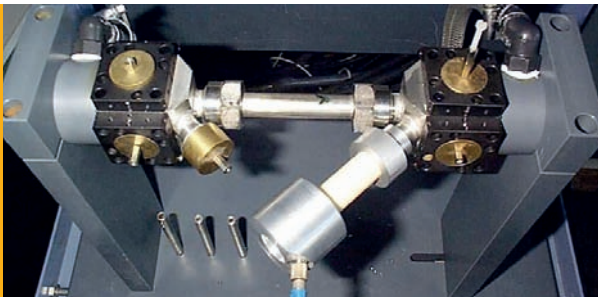
### High-speed measurements

Unstable arc attachment under simmer conditions; the conventional view is that the arc is jumping – we can show that it is a smooth move.



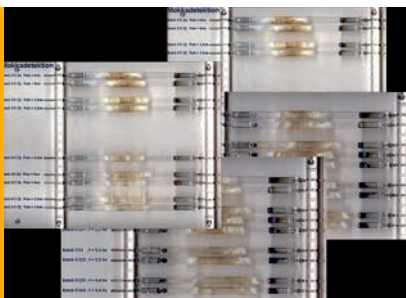
### Temperature measurements

Electrode Temperature Measurement – we can measure them up to 3200°C time and space resolved.



### Setup

Test results can often look obvious and simple.  
But this can only be achieved with specialist setup and measuring technology.

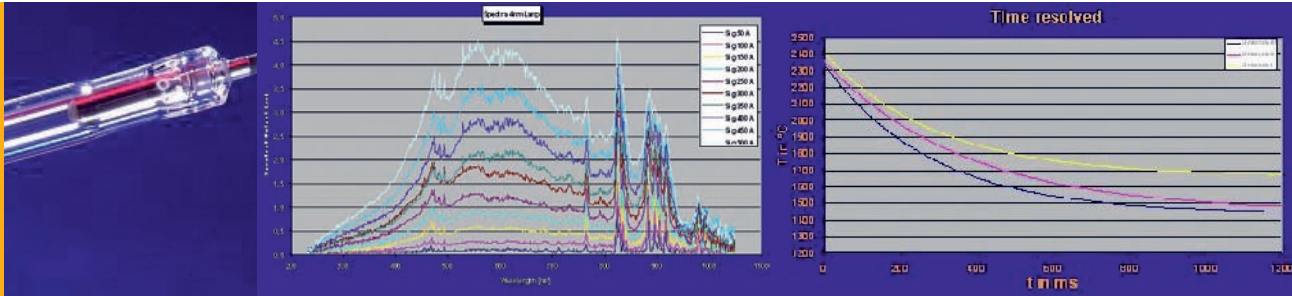


### Consistency and reliability

Systematic life testing of prototypes ensures repeatable product performance.

# Understanding and improving arc and flash lamps through advanced research

- Improving lamp lifetime
- Increasing efficiency
- Optimising light output



sponsored by:

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**Heraeus**

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