FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 12.12.2013, 16^{15} Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Mark S. Akselrod, PhD

(Chief Scientist and Executive Manager, Landauer, Inc. &
Physics Department, Oklahoma State University)

Latest Advances in Luminescent Materials and Instrumentation for Medical Physics and Radiation Research

The optically stimulated luminescence (OSL) technique has already become a successful commercial tool in personal radiation dosimetry, medical dosimetry, diagnostic imaging, geological and archeological dating. This review briefly describes the history and fundamental principles of OSL materials, methods and instrumentation. Progress in material and detector engineering has allowed new and promising developments regarding OSL applications in the medical field. New OSL instrumentation, data processing algorithms and real-time measurements for in vivo and in vitro dosimetry in both radiation therapy and diagnostic will be discussed. The next technological breakthrough was done with Fluorescent Nuclear Track detectors (FNTD) that has some important advantages in measuring fast neutron and high energy heavy charge particles that became the research tool in radiation therapy and radiobiology. New Mg-doped aluminum oxide crystals and novel type of imaging instrumentation for FNTD technology were engineered and successfully demonstrated for radiation dosimetry, medical dosimetry and radiobiological research.

gez. Peter Thirolf
Tel. 289-14064

gez. Norbert Kaiser
Tel. 289-12367