

Physikalisches Kolloquium Universität Kiel

Wintersemester 2018 / 2019

Dienstag, 08. Januar 2019

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**“Archaeometry: The Role of Physics in the Quest
to Understand Qumran”**

The famous Dead Sea scrolls, found in 1947 at Qumran, point to a group of people, the ‘Essenes’, described by famous philosophers including Pliny and Flavius Josephus. In 1998, interdisciplinary laboratory research started in Jerusalem between materials scientists, museum curators and archaeologists to obtain fresh information of what the manuscripts and the material culture may demonstrate, and how to preserve this cultural heritage for the centuries to come. While the primary question of ‘who wrote the scrolls and where’ remains unanswered this project opened a golden opportunity to employ archaeometry analytical techniques including structural analysis and spectroscopy to investigate the scroll parchment[1] and textiles[2] from Qumran[3]. In this lecture, I will explain how physics can provide non-destructive methods for investigating ancient artefacts. I will introduce the methods and explain how modern infra-red and fluorescence spectroscopic and neutron and X-ray methods can provide insight into the ancient practices and processes and also give us hints on how best to preserve these valuable antiquities.

- [1.]B. Murphy, M. Cotte, M. Mueller, M. Balla, J. Gunneweg, in *Holistic Qumran*. (Brill, 2010), vol. 87, pp. 77-98.
- [2.]M. Muller, B. Murphy, M. Burghammer, C. Riekkel, E. Pantos, J. Gunneweg, Ageing of native cellulose fibres under archaeological conditions: textiles from the Dead Sea region studied using synchrotron X-ray microdiffraction. *Applied Physics A: Materials Science & Processing* **89**, 877-881 (2007).
- [3.]H. J.B., G. J., *Khirbet Qumran et Ain Feshkha II, Novum Testamentum et Orbis Antiquus, Series Archaeologica 3*. (Academic Press Fribourg; Vandenhoeck & Ruprecht., Fribourg; Göttingen;, 2003).

Der Vortrag beginnt um **16:15 Uhr** im **Hans-Geiger-Hörsaal (LS13-R.52)**
des Physikzentrums.

Ab **16:00 Uhr** werden **Kaffee** und **Tee** angeboten.

W.J. Duschl
für die Dozenten der Physik

Gastgeber: Prof. Magnussen