



Polymers under Multiple Constraints

Polymer- & Soft-Matter-Seminar

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“The effect of migration of small molecules in polymers on the design of controlled release devices for malaria vector control”

**Tuesday,
18th December
2018**

at: 5.15pm

**VDP 4 1.27,
Von-Danckelmann-Platz 4,
06120 Halle**

Malaria vector control aims to prevent malaria parasite transmission by either repelling or killing the disease transmitting mosquitoes. In the latter case the insect killing is done either before humans are bitten or, rather surprisingly, afterwards! Controlled release of repellents and insecticides, over extended periods of time, is required in order to achieve these goals cost-effectively. This presentation will discuss the physics and thermodynamics behind the technologies that are implemented in the design of polymer-based products that provide long lasting vector control effects. It includes long lasting insecticidal bed nets and wall linings, insect repellent bracelets, fibres and fabrics, as well as microcapsules for larviciding. Successful design of such products relies on the targeted exploitation of a range of physical phenomena. This presentation will focus on the application of the physical phenomena of phase separation (nucleation and growth and spinodal decomposition) and small molecule migration (membrane permeability and blooming).



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