



UNIVERSITÄT GREIFSWALD
Wissen lockt. Seit 1456



Das **Institut für Biochemie** lädt gemeinsam mit dem Ortsverband der
Gesellschaft Deutscher Chemiker zu einem

K o l l o q u i u m d e r G D C h

Großer Hörsaal des Instituts für Biochemie
Felix-Hausdorff-Str. 4, Greifswald

Montag, 03. November 2025, 16 Uhr c.t.

Prof. Dr. Alexander Efimov

Universität Tampere, Finnland

spricht zum Thema:

Alfa-substituted metal phthalocyanines: photoantimicrobial activity and light-triggered drug release

Abstract:

The lecture will discuss peculiarities of the synthesis, spectral properties, and potential biomedical applications of alfa-aryl substituted metal phthalocyanines recently developed in our group. Phthalocyanines are very common dyes which find a diverse use in every day's life. Our Synthetic team at Tampere University specializes in the development of functional photoactive molecules, and recently we have prepared a phthalocyanine photosensitizer LASU having unusually strong photoantimicrobial efficiency. The molecule was well suitable for dyeing textiles and allowed to prepare reusable self-disinfecting fabrics with strong antibacterial and anti-COVID action. The textiles showed a significant photodynamic effect even under moderate indoor light, which made them suitable for general use e.g. in households and public places. Developing further the possible application area of a powerful and stable photosensitizer, we impregnated the LASU phthalocyanine into a nanofiber cellulose hydrogel, which allowed us releasing a cargo drug from the hydrogel-encapsulated liposomes under light triggering. By making the phthalocyanine's periphery hydrophobic and by tuning the regioisomeric patterns, we were also able to incorporate the photosensitizers directly into the liposomal membranes and to obtain an efficient release of the cargo molecules upon far-red excitation.

Einladende

Prof. Dr. Carola Schulzke

Dr. Christian Fischer

Vorsitzender des Ortsverbandes der GDCh