Fakultät für Naturwissenschaften

Institut für Chemie

lädt ein

gemeinsam mit der Gesellschaft Deutscher Chemiker zum

Vortrag

von Herrn

Prof. Oliver Thorn-Seshold

Professur für Chemische Biologie

Technische Universität Dresden

“Chemical Photoreceptors and Superfluorophores”

am: 21.05.2026

um: 09:30 Uhr

wo: im Raum A12.232

Gäste sind herzlich willkommen!

TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
CHEMNITZ

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Fakultät für Naturwissenschaften

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TUC CHEM
INSTITUT FÜR CHEMIE

Prof. Oliver Thorn-Seshold
Professur für Chemische Biologie
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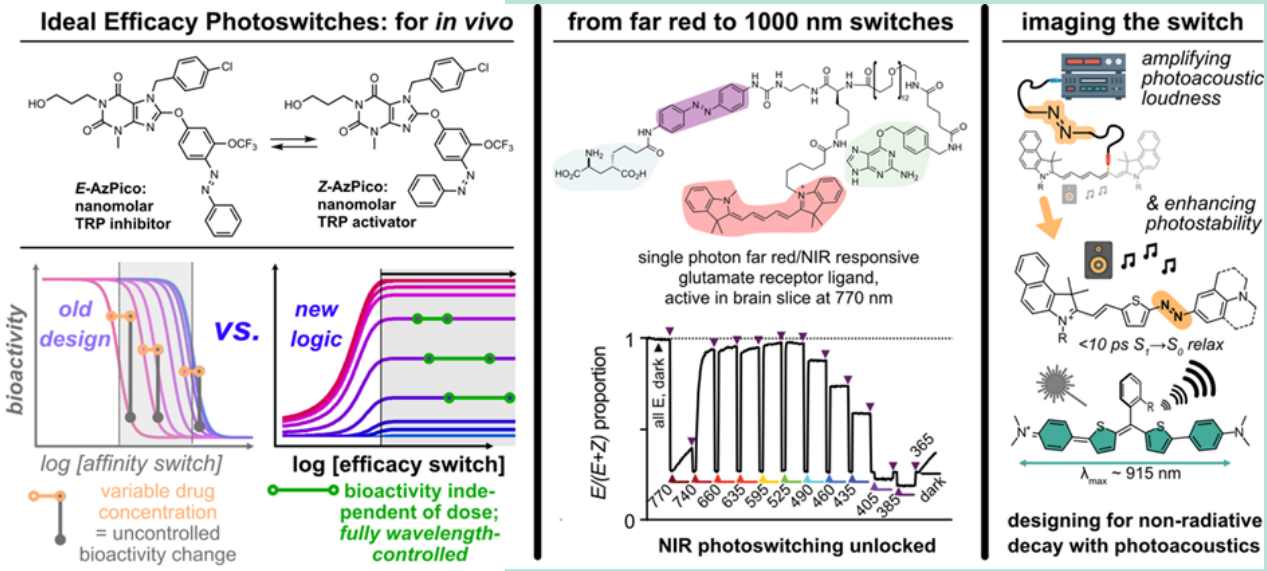
GDCh

"Chemical Photoreceptors and Superfluorophores"

Photoswitchable protein modulators are tool reagents that can manipulate biology in cells and tissue culture with very high spatiotemporal precision. Recent advances are now poised to energise this field. (1) Efficacy photoswitching is a new design logic for photopharmacology that allows highly practical chromocontrol: i.e. only the colour of light applied (not the drug concentration!) determines the bioactivity (doi.org/m75j). (2) Biocompatible singlet-manifold photoswitching has recently jumped from its old photoresponse limits around 600 nm to reach 1000 nm, i.e. well within the NIR transparency window (doi.org/mtnw, doi.org/ks9v). In parallel, the molecular switches themselves are revealing previously hidden performance traits. Azobenzenes are widely used as fluorescence quenchers and photoswitches, but are not usually imaged as signal generators. Expressing two latent aspects of their photochemistry now accesses (3) ultra-stable "superfluorophores" for singlemolecule and super-resolution microscopy, and (4) loud photoacoustic agents for in vivo tomographic imaging (doi.org/mzgt, doi.org/ntpt).



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