

# Novel LED-based UV Reactors for Water Treatment - Toxicological Assessment



**prof. RNDr. Luděk Bláha, Ph.D.**

Mechanistická environmentální toxikologie





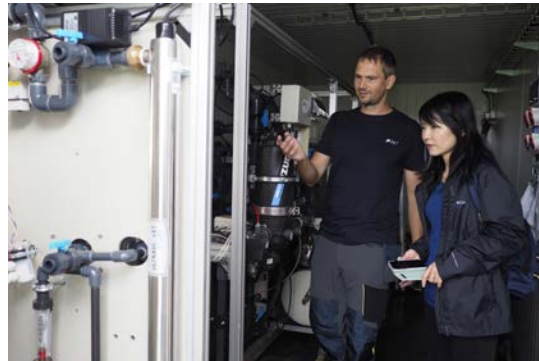
Lamp Heat and Light Direction – Fouling Potential



# Water samples from WWTP treated by UV-LED

## PILOT WASTEWATER TREATMENT (ASIO)

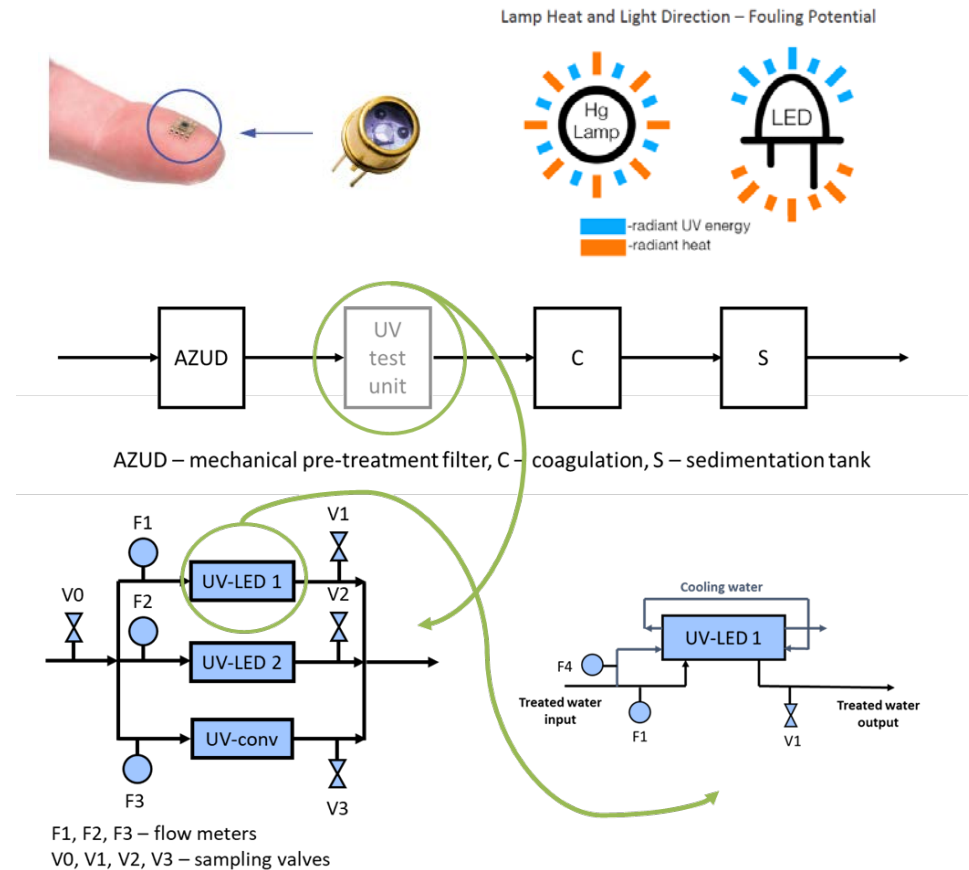
- Final UV LED disinfection of pre-treated wastewater in a larger scale



# Water samples from WWTP treated by UV-LED

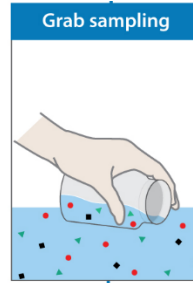
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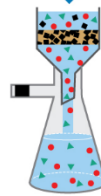


# Water testing

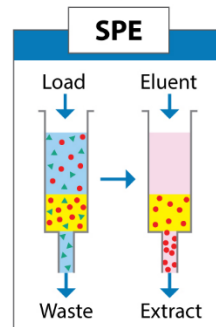
Water sampling



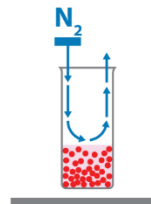
Filtration



Extraction



Solvent evaporation and dilution

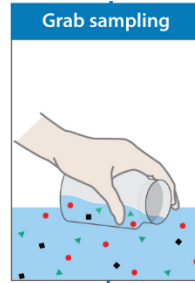


In vitro testing

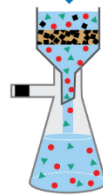


# Water testing

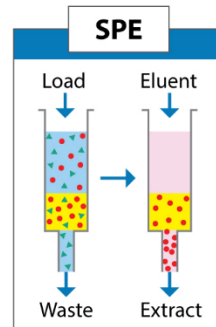
Water sampling



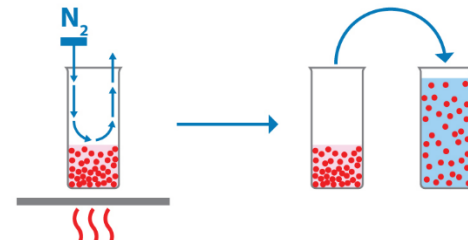
Filtration



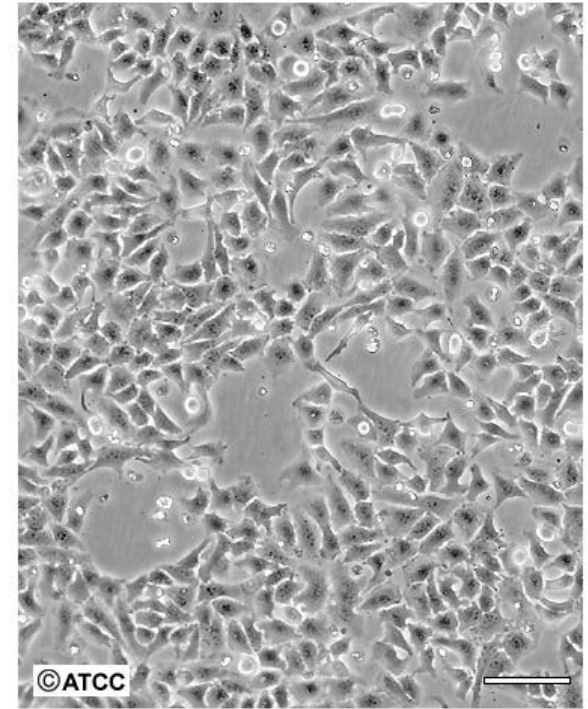
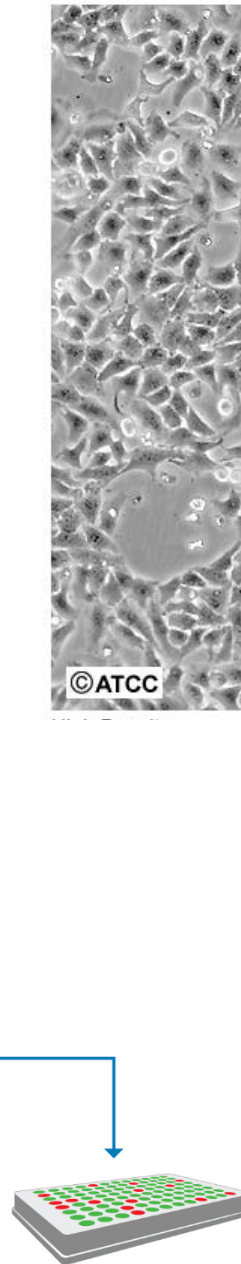
Extraction



Solvent evaporation and dilution

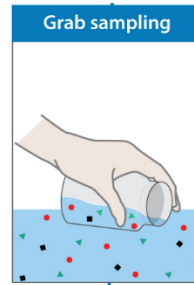


In vitro testing



# Water testing

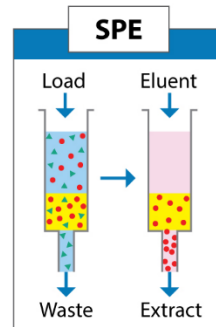
Water sampling



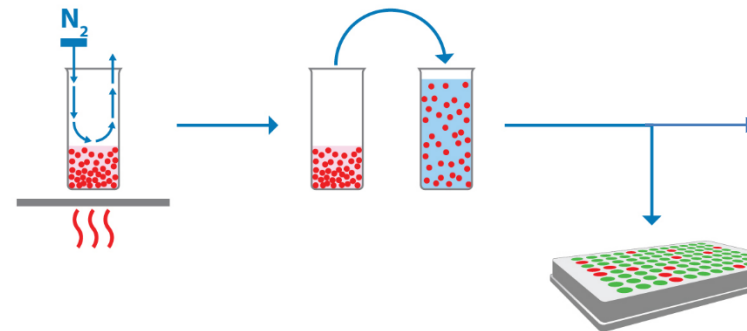
Filtration



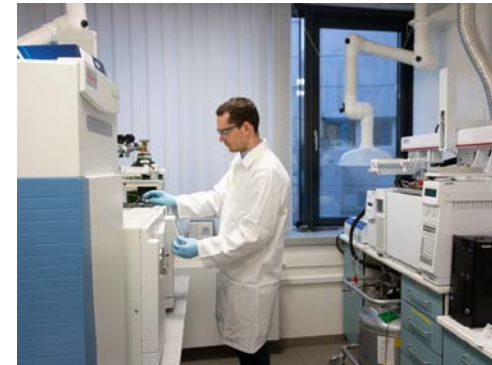
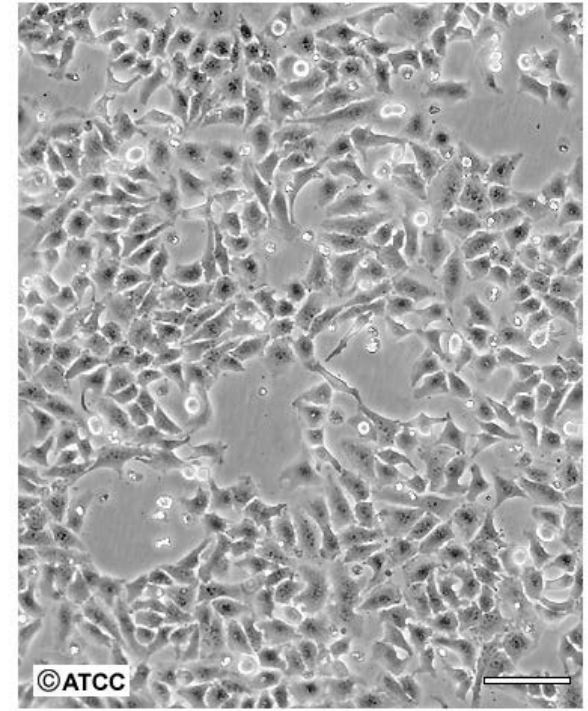
Extraction



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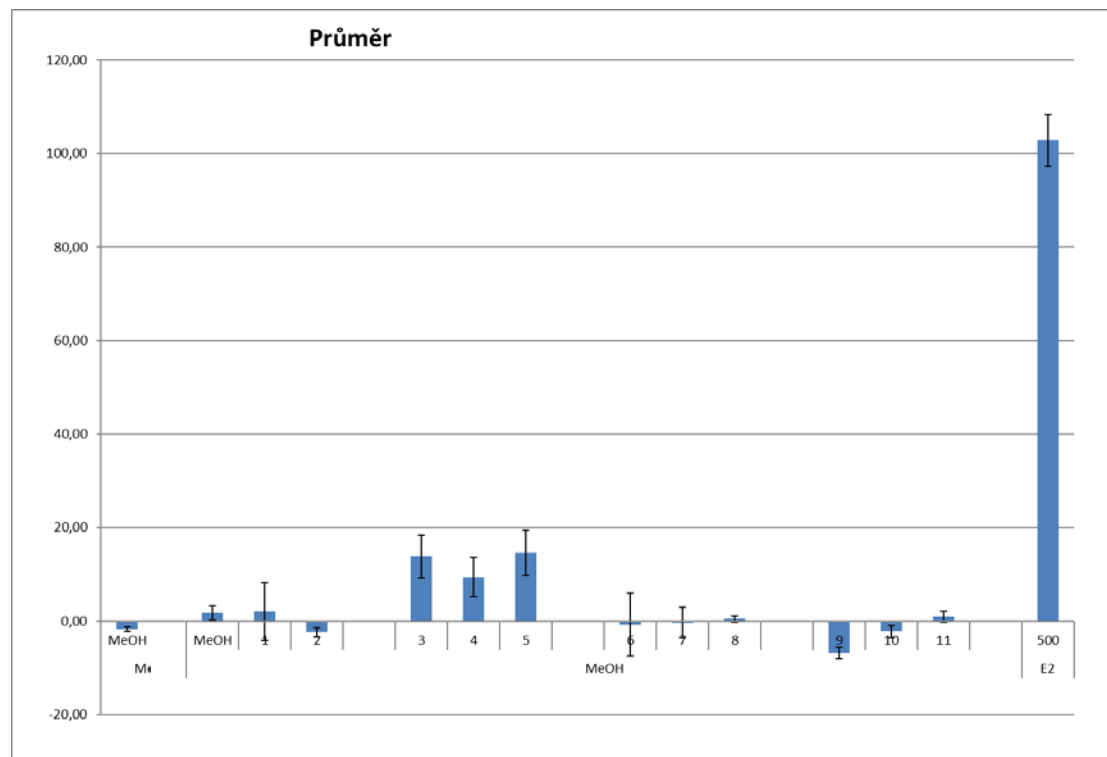
In vitro testing



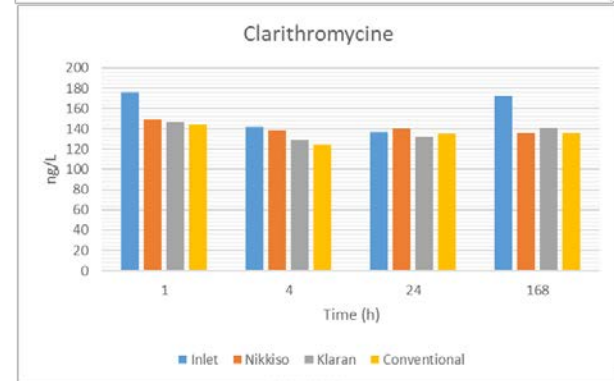
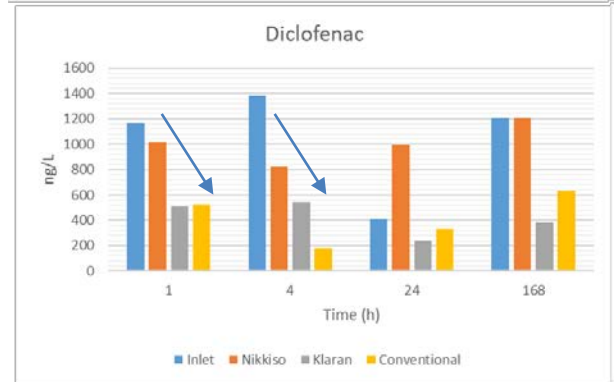
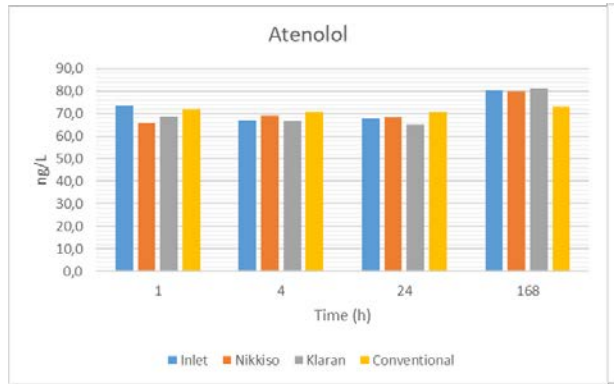


# Drinking waters from Japan

- Estrogenicity
- Androgenicity
- Glucocorticoidity
- AhR-mediated activity

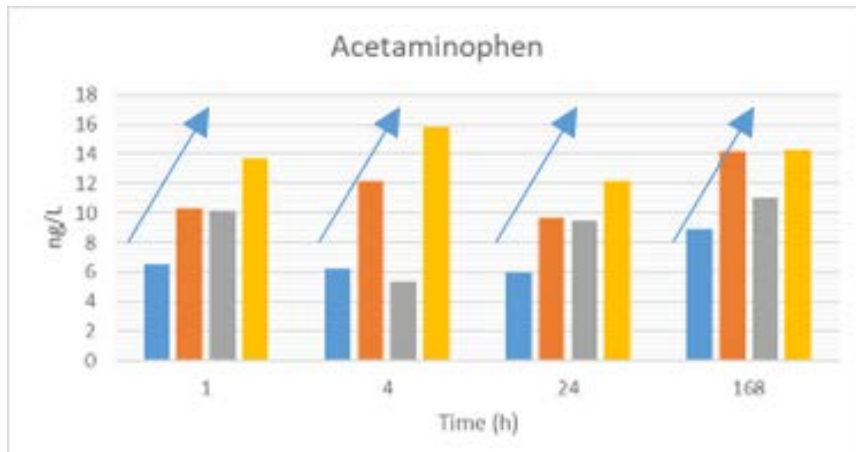


# UV(LED) at WWTP - pharmaceuticals



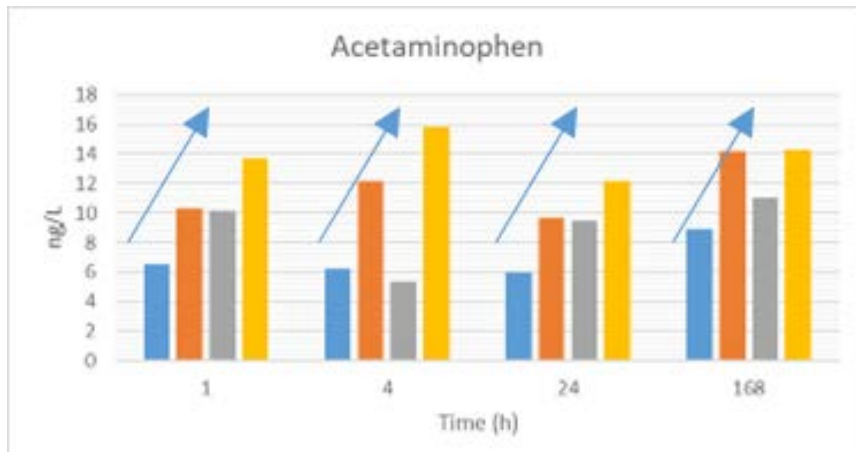
# UV(LED) at WWTP - pharmaceuticals

■ Inlet   ■ UV-LED1   ■ UV-LED2   ■ LP Hg-UV

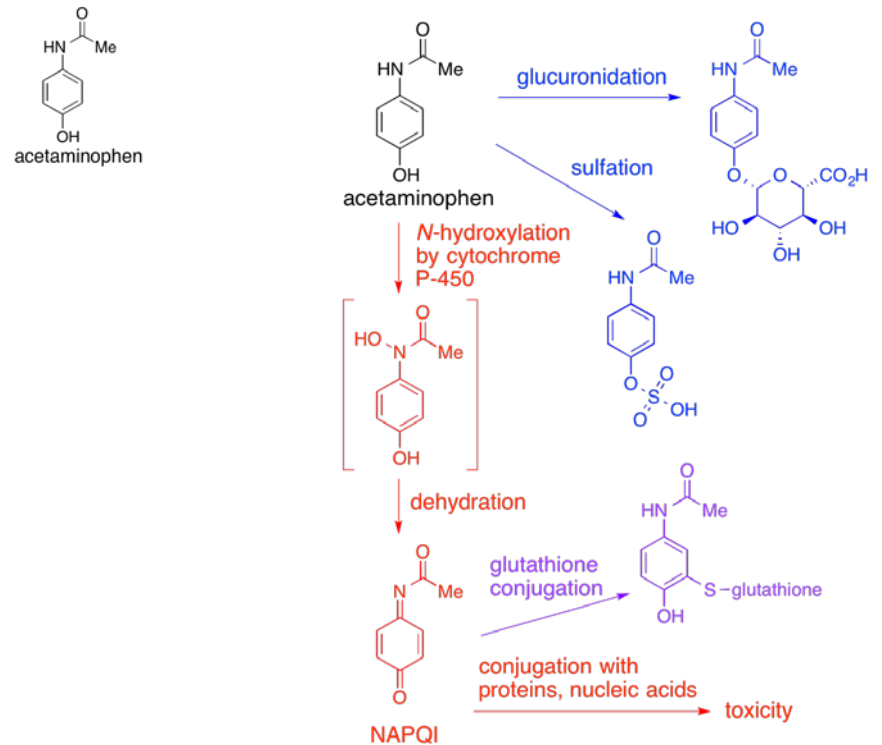


# UV(LED) at WWTP - pharmaceuticals

■ Inlet   ■ UV-LED1   ■ UV-LED2   ■ LP Hg-UV



Human metabolism of ACE in liver




## Bakalářské práce z Životního prostředí a zdraví

Řadit témata dle: [názvu](#) | [poslední modifikace](#) | **vedoucího**



Zobrazit témata: **moje aktuální** | [aktuální volná](#) | [všechna aktuální](#) | [nezveřejněná](#) | [žadající o souhlas](#) | [k potvrzení](#) | [pokročilí](#)

RNDr. Mgr. Michal Bittner, Ph.D.

1. [Genotoxicita odpadních vod recyklovaných pro zemědělské či pitné využití](#)


*Vede:* RNDr. Mgr. Michal Bittner, Ph.D., učo 15440 

*Student (max. 1):*

1. Mila Švancarová, učo 521020 , PŘF B-ZPZ ZPAZ [sem 5, roč 3] •  Nelze potvrdit, nejsou vyplněny povinné údaje

[Zobrazit operace](#)

2. [Využití pokročilých oxidačních procesů pro dočišťování \(recyklované\) vody](#)

*Vede:* RNDr. Mgr. Michal Bittner, Ph.D., učo 15440 

*Student (max. 1): zatím žádný*

[Zobrazit operace](#)

