

**המעבדה לכימיה אורגנית ואי-אורגנית**

## **סמינר ספרותי**

**יום א', 18.12.2022 בשעה 9:30, בחדר הסמינרים**

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בנושא:

## **Sustainable Synthesis of Phosphorus Chemicals**

# Sustainable Synthesis of Phosphorus Chemicals

Phosphorus chemicals are a very important class of compounds with a wide range of applications in both academia and industry. The current two industrial methods used for their synthesis include: (a) the oxidation of white phosphorus ( $P_4$ ) with toxic  $Cl_2$  gas to generate the highly corrosive  $PCl_3$  liquid, which is subsequently transformed into a variety of mono-phosphorus compounds by reactions with suitable nucleophiles. (b) reaction of aqueous  $NaOH$  with  $P_4$  to generate the highly toxic and pyrophoric  $PH_3$  gas, which is then employed for the hydrophosphination of unsaturated organic substrates. Clearly, both methods suffer from reliance on highly hazardous reagents, undesirable waste formation and multi-step procedures. It is clear that more efficient, less hazardous, and environmentally friendly methods for the synthesis of phosphorus chemicals are needed. My talk will give a general introduction about the phosphorus element and its role in life and the chemical industry, followed by presentation of several recent breakthroughs in more sustainable synthesis of phosphorus chemicals.

