

One-day workshop at Aquatech, Amsterdam RAI,  
Thursday 13<sup>th</sup> March 2025

<https://phosphorusplatform.eu/AquatechWorkshop>

## The new EU requirements of the revised Urban Waste Water Treatment Directive for phosphorus removal, reuse and recycling:

interactions between tighter discharge consents, chemical P-removal coagulants, P-recovery

**NOTE: participants have free access to Aquatech on condition that you MUST register BOTH for Aquatech ([here](#)) and for the ESPP workshop ([here](#))**

See: summary ESPP workshop on iron-phosphate interactions (2020) [www.phosphorusplatform.eu/scope138](http://www.phosphorusplatform.eu/scope138)

**Location: Amsterdam RAI – room D201-202 - Elicium building (Hall 13), second floor, Entrance D.**

- **9h00:** reception coffee
- **9h15 – 10h15:** Iron / aluminium salts and tighter P-removal requirements
  - *Jean-Christophe Ades, Incopa (European Inorganic Coagulants Producers Association):* overview on coagulant use for effective and efficient phosphorus removal
  - *Chris Thornton, ESPP:* Overview of the revised EU Urban Waste Water Treatment Directive 2024/3019, in particular requirements for nutrient removal, contaminant reduction in sludge
  - *Dries Huygens, European Commission Joint Research Centre:* Defining phosphorus “reuse and recycling rates” in the revised Urban Waste Water Treatment Directive 2024/3019
  - *Questions and discussion*
- **10h15: Networking break**
- **10h45 – 12h30:** The revised Urban Waste Water Treatment Directive (2024) phosphorus “reuse and recycling” targets
  - **Two breakout sessions (1 ¾ h)**
    - Impacts of Fe/al on P-recovery processes (P “recycling”) – Room D407 *Rapporteur: Ida Engan, COWI*
      - *Christian Kabbe, EasyMining:* Ash2Phos process, demonstrated separation of phosphorus from iron/aluminium in sludge ash, recovery of the P, Fe, Al
      - *Mohamed Takhim, TTBS:* RubiPhos technology® for separating P and other nutrients from Al/Fe from sewage sludge ashes
      - *Andrea Salimbeni, ReCord:* Investigations into separating phosphorus from Fe/Al via leaching of sewage sludge biochars
      - *Hubert Halleux & Marc Sonveaux, Prayon:* High efficiency recovery of phosphorus with iron and aluminium separation
      - *Marga Breeuwsma, SusPhos B.V.:* The added value of iron and aluminium for the SUSPHOS phosphate recovery technology
      - *Helmut Gerber, Pyreg:* Phosphorus plant availability and solubility of Pyreg sewage sludge biochar, from sewage treatment with and without Fe/Al coagulant use
      - *Matthias Rapf, Stuttgart University:* Recovery of phosphorus as P4 from sewage sludge, fate of iron, in the Flashphos process
      - *Frans Horstink, ThermusP:* The active role of iron in Spodofos P4 recovery from sewage sludge ash
    - Fe/Al in digested sludge and crop phosphorus availability (P “reuse”) – Room D201-202
      - *Kasper Reitzel, University of Southern Denmark (SDU):* Phosphorus reuse from dredged lake sediment – iron and crop P availability
      - *Ruben Sakrabani, Cranfield University UK:* Phosphorus plant availability from iron dosed sludge
      - *Anders Finsson, Svensktvatten (Swedish Water) and Håkan Jönsson, SLU (Swedish Agriculture University):* Sewage sludge crop phosphorus availability data from long-term field trials in Sweden
      - *José-Marie Gomez, Biomasa Peninsular and EFAR (European Federation for Agricultural Recycling):* Data on agricultural value of sewage sludges containing iron or aluminium
      - *SM Ashekuzzaman, MTU Munster Technological University, Cork, Ireland:* impacts of iron and aluminium on crop P availability of dairy wastewater and sewage sludges, and relevant biobased fertilisers

- *Naeimeh Vali, University of Borås, Sweden: Effects of Fe/Al on P Compounds in Biochars and Impacts of Adding K Compounds*

- **12h30 – 13h45: Lunch**
- **13h45 – 15h00: Phosphorus recycling upstream of sludge combustion (from liquor or sludge flows)**
  - **Two breakout sessions (1 ¼ h)**
    - P removal and recovery mainstream and sidestream – Room D407
      - *Joachim Clemens, SF Soepenberg: iPhos process*
      - *Dirk Herold, Xylem: return and release stream Ostara struvite recovery, % of waste water treatment plant input P recoverable*
      - *Carlo Belloni, Wetsus, Netherlands: P adsorption/release from iron oxide adsorbents for high rates of P-removal and P-recovery*
      - *Ana Soares, Cranfield University UK: Ion exchange process for P-removal and recovery, interactions with coagulants*
    - Recovery of phosphorus as iron phosphate and possible uses or processing – Room D201-202
      - *Martijn van Leusden, Royal Haskoning DHV: ViviMag® vivianite recovery trials*
      - *Martijn Bovee, Aquaminerals: Valorisation routes for vivianite to products with markets*
      - *Kirill Nikitin, University College Dublin: Test results for recovery of organic phosphate esters from vivianite, SINFERT process*
      - *Maria Cinta Cazador Ruiz, Fertiberia: agronomic value and market for vivianite as an FE+P fertiliser in iron-deficient soils*
- **15h00 – 15h30: Networking break**
- **15h30 – 16h30 Conclusions, perspectives, proposals (1 ½ h):**
  - *Sussan Pasuki, Heidelberg Materials and CEMBUREAU: Sustainability in the cement industry – the use of P-depleted sewage sludge as a fuel on the road to decarbonization*
  - Reports from the four breakouts
  - Panel
  - *Questions and discussions*
- **16h30: Networking drinks offered by Netherlands Nutrient Platform, NL Pavilion - Hall 12**