



DTU Offshore – Danish Offshore Technology Centre

# Deep-dive session on Green Chemicals

## **Co-Chair / Moderator (TotalEnergies):**

- *Salima Baraka-Lokmane, Senior specialist in Flow Assurance & Production Chemistry, Visiting Professor at the University of Leeds, Pau*
- *Mike Oehler, Lead corrosion engineer, TEPDK*

## **Hosts (DTU Offshore):**

- *Yanina Dragomilova Ivanova, Production Chemistry Advisor*
- *Nicolas Bovet, Senior Researcher & Technical Advisor*
- *Kitt Malling Ravnkilde, Programme Manager*

# Agenda – Green Chemicals deep-dive

*Co-Chair / Moderator: Mike Oehler / Salima Baraka-Lokmane (TotalEnergies (TTE))*

- 13:00 Welcome to session
- 13:05 Holistic overview of the Green Chemicals prototypes
- 13:10 What is the challenge/ urgency for replacement with currently used chemicals? (Dana Nasr / TTE)
- 13:25 How does the prototypes seek to solve the problem? (4 min / pitch)
  - Green corrosion inhibitors (Ghada Shaban / DTU Construct)
  - Clean biocide (Jakob Stein / AAU)
  - FeCO<sub>3</sub> stabilization (Dilshad Shaikhah / Leeds University)
  - Nanofilament coating (Tobias Weidner / AU)
  - Green H<sub>2</sub>S scavengers (Christian Marcus Pedersen / KU & AAU)

*Road to replacement of currently used chemicals:*

- 13:45 Laboratory qualification of corrosion inhibitors & field observations from the use of corrosion inhibitors (Maalek Mohamed-Said & Bruce Cowe / TTE)
- 14:20 Commercialization (Anders Krag / DTU Offshore)
- 14:30 Summary of discussion
- 14:45 End of session

# Green Chemicals

- **Green corrosion inhibitors (DTU)**
- **Corrosion inhibition by halophilic plants – Clean Biocide (AAU)**
- **Eco-friendly corrosion mitigation via  $\text{FeCO}_3$  stabilization (Leeds)**
- **Nanofilament coating (AU)**
- **Green  $\text{H}_2\text{S}$  scavengers (KU/AAU)**

# Holistic overview of the Green Chemicals prototypes

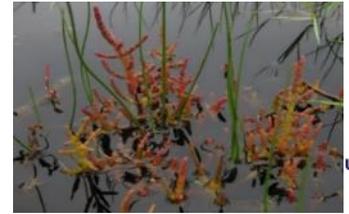
CTR.2 program  
(corrosion & scale)



Clean Biocide to efficiently control MIC and replace/ reduce the Biocides currently used offshore

COP(OC)OC.[O-]S(=O)(=O)[O-]

THPS tetrakis(hydroxymethyl) phosphonium sulfate



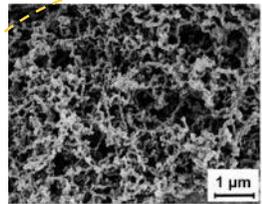
Halophilic plant-based biocides – Clean Biocide



VIA University College



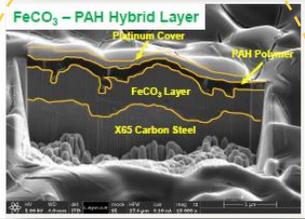
Green CIs in combination with FeCO<sub>3</sub> stabilization and Nanofilament coating to prevent corrosion/ scaling efficiently and replace/ reduce current commercial CIs



Nanofilament coating



Green corrosion inhibitors (CIs)



FeCO<sub>3</sub> stabilization

UNIVERSITY OF LEEDS

PWM program

R1N(R2)CCN(R3)CCN(R4)R5

Green H<sub>2</sub>S scavengers to replace/ reduce usage of currently used Triazine scavenger and Formaldehyde releaser

R=CH<sub>2</sub>CH<sub>2</sub>O  
H

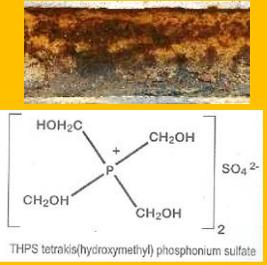


Sugar-based H<sub>2</sub>S Scavengers



# Holistic overview of the Green Chemicals prototypes

CTR.2 program  
(corrosion & scale)



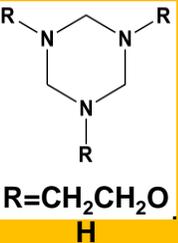
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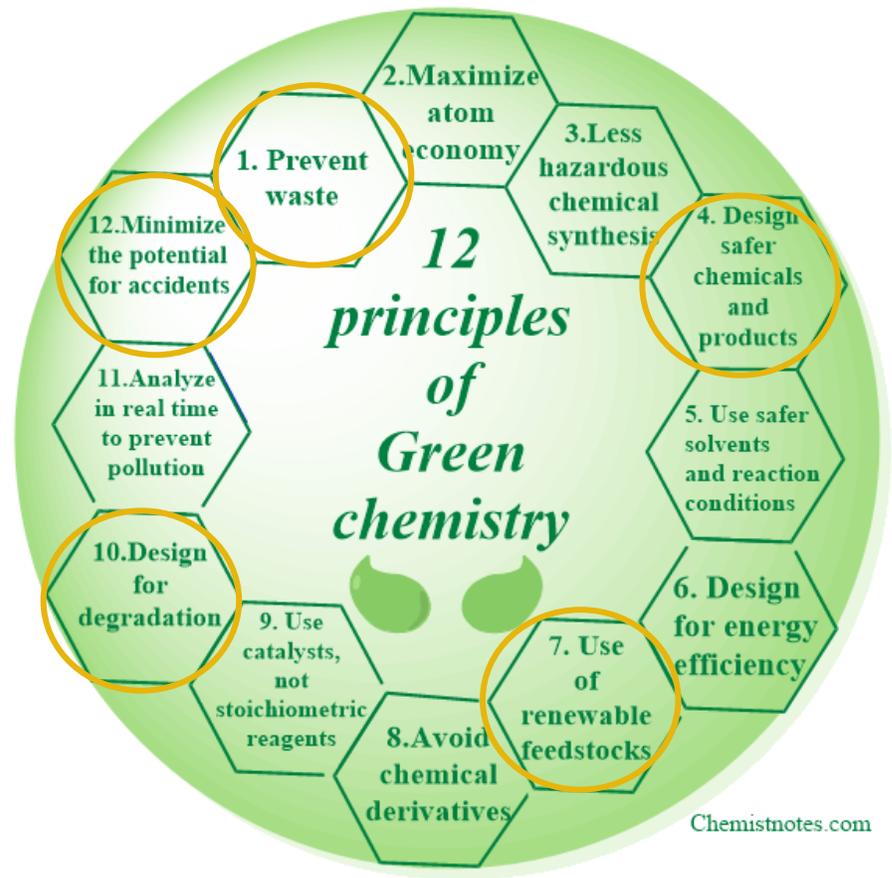
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# Thank you for joining this session

It is now time for a coffee break – it takes place in the hotel lobby.



Meeting Place is open during the break.

After the coffee break, the next session will begin in Teatersalen (the main venue) at 15.30. *Please be there on time!*