

HIGHLIGHTS IN ENERGY RESEARCH10.10.2019, 16:00 - 17:00, EPFL Valais, 4th floor, ZEUIER room**Advancements in CO₂ capture with the use of liquid amines, solid sorbents and membranes***Dr. Paul-Emmanuel JUST**Shell Technology Center Amsterdam, The Netherlands*Host : Prof. Kumar Agrawal

Mitigation of anthropogenic CO₂ has become a global challenge to prevent the negative consequences associated with high atmospheric CO₂ concentration. The International Energy Agency shows that in the transition towards a future energy system with substantial lower carbon footprint, CO₂ capture from the industry and power sector followed by storage or utilization is one of the important mitigation measures to reduce global CO₂ emissions. The Carbon Capture and Storage or Utilization value chain (CCUS) is currently operational globally in several industries and at small to large (> 1 Mtpa CO₂) scale. Cost reduction by technology development is one of the levers that could support economic viability of implementation of the CCUS value chain at the scale required. The CO₂ Capture and Compression block is an important cost driver in the CC(U)S value chain. Advancements in three different capture technologies for post-combustion will be discussed: aqueous amine solvents, which currently represent the state of the art technology and often used as reference case for comparison of emerging technologies, adsorption processes using a fluidized solid adsorbent and membrane separation processes.



Bio : Paul-Emmanuel Just is senior researcher in post-combustion CO₂ abatement technologies at Shell Global Solution B.V. He started in Montreal, Canada, where he oversaw the development of new amine solvents for post-combustion CO₂ capture. He also took part of several piloting campaigns on the field to demonstrate the CANSOLV CO₂ process. He joined the CO₂ Abatement team at the Shell Technology Center Amsterdam in 2018, where his broader scope of research now includes other types of capture technologies such as non-aqueous solvents and membranes. Paul-Emmanuel Just was born in 1974 in France. He obtained a M.Sc. degree in Physical Organic Chemistry from the University Paris VII, France in 1997 and a Ph.D. in Physical Organic Chemistry, with minors in Electrochemistry and Spectroscopy, in 2001 from the University Paris VII, France. Dr. Just has authored numerous scientific papers in various areas: polymers, organic synthesis and carbon nanotubes, Carbon capture.