



SAS-CI webinar no. 1



Prof. James Turner, CCRC, KAUST

“Current internal combustion engine technology and how powertrains can be improved”

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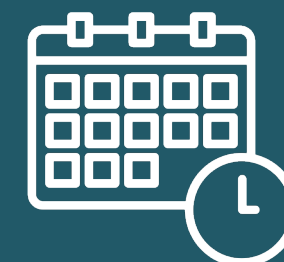


SA.Comb.Inst@gmail.com



SAS-CI

June 2, 2024 @ 4:00 PM KSA





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Abstract

The presentation begins by describing the current general technology level for the three main types of internal combustion engines (ICEs) – **light-duty spark-ignition** and **compression-ignition**, and **heavy-duty compression-ignition**. It does this by describing the typical engine architecture and then the major sub-systems – combustion and fuel delivery, valvetrain, air handling, and emissions control – for each, drawing comparisons where appropriate. Certification requirements are also discussed.

It then moves on to briefly discuss the effect of vehicle hybridization on the ICE and some likely future directions for powertrain improvement, together with the effect of fuel evolution and the possibilities afforded by some of the possible **future carbon-neutral e-fuels**.

A final example is shown of a practical combustion engine which emits no tailpipe CO₂ whatsoever.

Bio for
Professor James Turner