

# Advance in Hydrogen Energy in Brazil

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## Abstract:

Hydrogen energy has been receiving a lot of attention from Brazilian and foreign companies lately. A lot of academic work on hydrogen and fuel cells in many academic groups is a reality in Brazil since the beginning of the 90's. A not so long international boom arised in 2003 by the creation of forum IPHE that includes Brazilian Government since then. Inmetro has participated since 2004 at IPHE's RCS (regulations, codes, and standards) working group and in 2007 at (and coordinating since 2016) ABNT's technical committee CEE-067 on hydrogen technologies, that is a mirror of ISO TC-197 on both hydrogen technologies and hydrogen production, as well as keeps a close connection with IEC TC-105 on fuel cell technologies. Brazil has been sharing the international approach on clean hydrogen which aims the use of low carbon green hydrogen from the mid-term on whereas blue hydrogen is to be used in near-term (transitional phase) only. Internal R&D work at Inmetro encompasses studies on metrological reliability and measurement uncertainty by way of Monte Carlo simulations as well as cooperation with UEZO for the combination of both sulfonated polymers and clays, with appropriate fillers, in PEMFCs electrolytes. Additionally, Inmetro is developing capacity building for gas metrology in the field of hydrogen use, basic in the determination of purity assessment.