

Workshop »Coatings for Energy Technologies«

High volume coating of metallic plates – how to deal with the challenge of the steep hydrogen market growth

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The hydrogen market is growing rapidly. The industry is developing for technical solutions for hydrogen generation and hydrogen-based electricity generation for mobile and stationary applications, and universities and institutes are investigating solutions for the long term. Today's challenge is to bridge the gap between current low to medium technology maturity level and market demand: how to be able to produce hydrogen on large scale and how to scale fuel cell production to high volumes?

IHI Hauzer and IHI Ionbond are working on this challenge for many years, developing low cost coatings to supply to the market either by machine solutions and coating services. Key components of electrolyzers and fuel cell stacks like bipolar plates, PTL sheets and CCM's need high quality coatings to enable good catalyst performance, good electrical conductivity and good corrosion properties. For bipolar plates and PTL sheets, Hauzer and Ionbond have developed coatings based on PVD and DOT technology.

In the presentation, both technologies will be addressed, including the current status of market introduction and our expected further roll-out within the next years. For PVD, the current main challenges related to machine and process solutions for high speed inline coating will also be addressed. For DOT technology the current main challenges are related to upscaling production capacity in the near future and optimizing precious metal use further.