

## **Ūdeņraža iegūšana no atkritumu alumīnija – procesu izmeklēšana un rezultāti – AliCE-WHy**

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Atkritumu apsaimniekošana ir arvien pieaugoša problēma, tai pat laikā enerģijas pieprasījums arvien pieaug. Alumīnija atkritumi ir viens no Baltijas reģiona eksporta materiāliem. Ir zināms, ka alumīnijs var reaģēt ar ūdeni veidojot ūdeņradi un alumīnija oksīdu/hidroksīdu. Efektīvai reakcijas traucē dabiskais oksīda slānis. Tādējādi, lai veiksmīgi atrisinātu šo atkritumu un enerģijas problēmu, ir jāizstrādā oksīda slāņa pasivācijas un pilna cikla process t.i. ūdeņraža ražošana, pārpalikuma vielu katalīze lietderīgos materiālos un šī procesa ietekme uz vidi. AliCE-Why projekta mērķis ir izmantot konsorcijs zināšanas un ekspertīzi lai rastu risinājumu šai problēmai izmeklējot individuālos procesus un kopējo ciklu. Šajā darbā ir pētīta ūdeņraža ražošanas atkarība no eksperimentālajiem parametriem: elektrolīta temperatūras un koncentrācijas un dots ieskats projekta attīstībā.

### **Hydrogen production from aluminium waste - process investigation and results so far – AliCE-WHy**

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Waste management is an ever-growing problem, in combination with energy management and increased demand it was crucial to find ways how to tackle both problems simultaneously. It is known that Aluminium can react with water to produce hydrogen. But the natural oxide layer on the aluminium is an obstacle for the reaction. Thus, for a successful solution of this waste and energy problem investigation of oxide layer passivation and full cycle process must be devised. The aim of the AliCE-Why project is to utilize knowledge and expertise of the consortium and find a solution of oxide passivation, production of hydrogen and further catalysis of aluminium oxide. In this work investigation of the hydrogen production dependence on the experimental parameters is elaborated.

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