

Vesinik
Hydrogenium

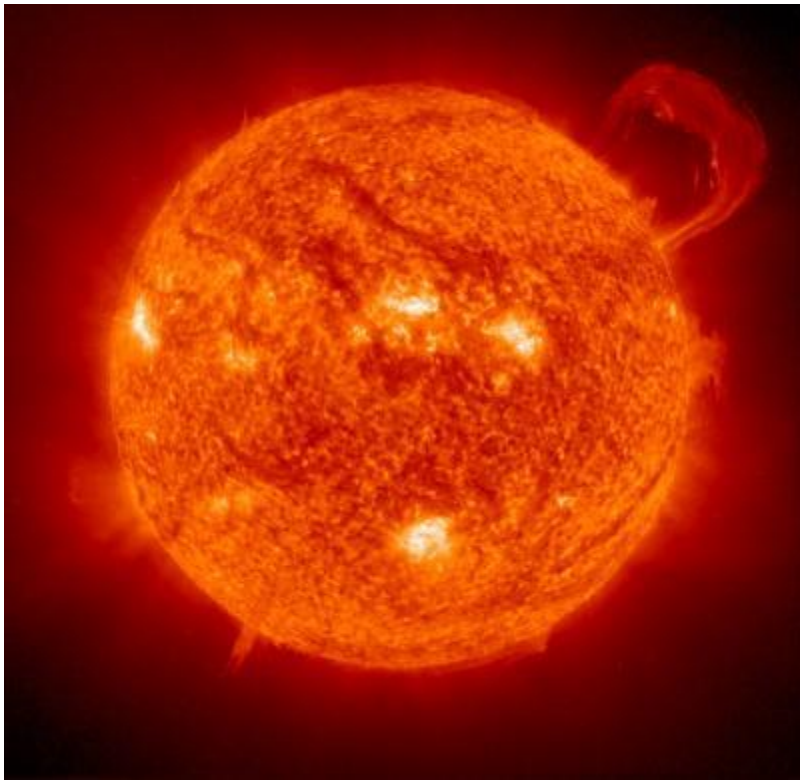
Neeme Katt

Vesiniku avastamine

- Arst ja alkeemik
Paracelsus (1493 – 1541)
sai hapete reageerimisel
metallidega
- 1766 – Henry Cavendish
(1731 – 1810) määratles
kui iseseisva aine ja
elemendi



Vesinik on Universumis levinuim element



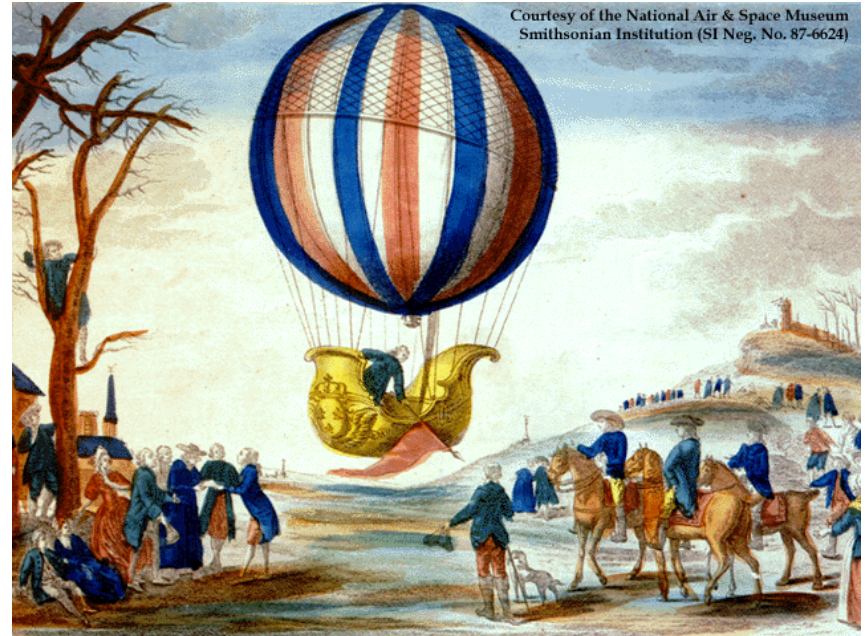
Vesiniku leidumine Maal

- Aatomite arvult 3. kohal (O ja Si järel)
- Kuulub väga paljude ühendite koostisse
 - vesi,
 - orgaanilised ained (taimed, loomad),
 - kütused (maagaas, nafta)



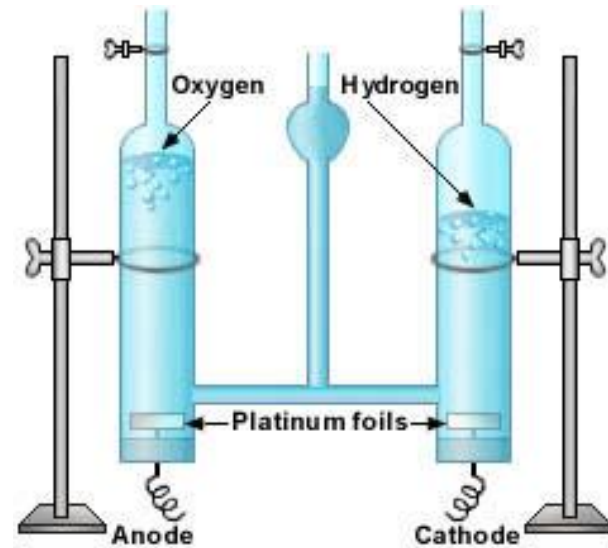
Vesiniku füüsikalised omadused

- kergeim gaas
 - õhust 14,5 korda kergem
- värvusetu
- lõhnatu
- maitsetu



Vesiniku saamine tööstuses

- vee elektrolüüsil
 $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$

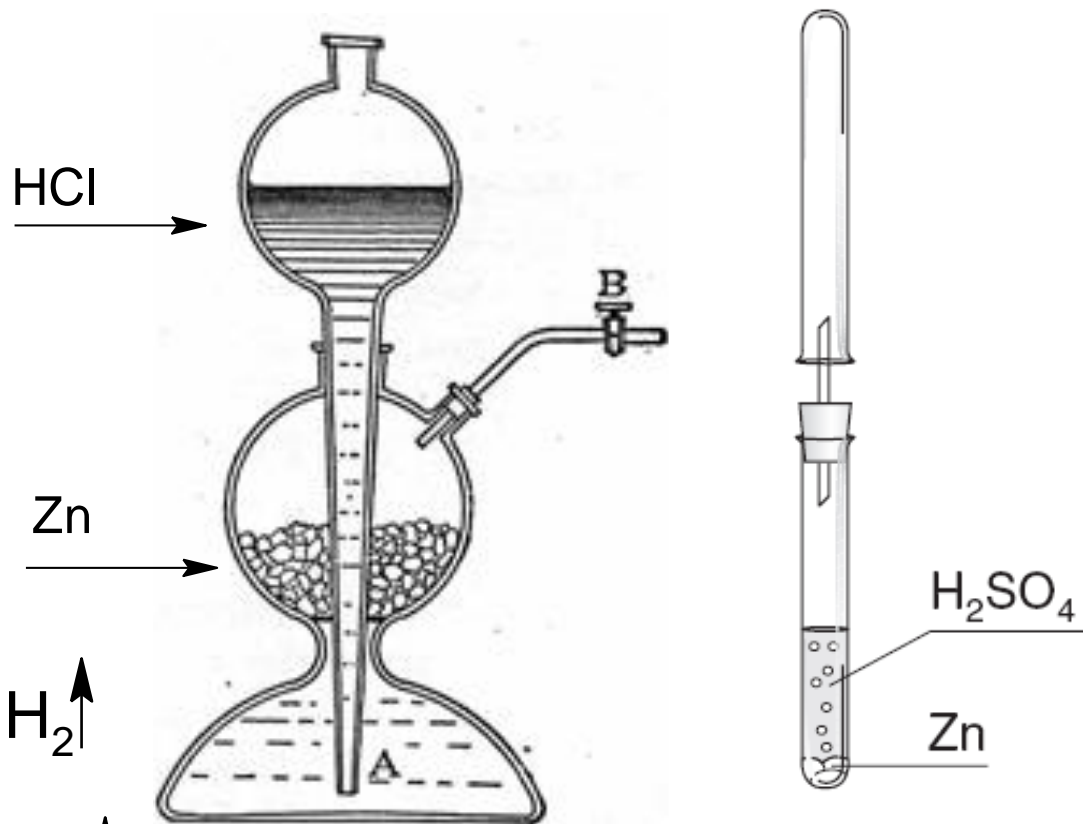
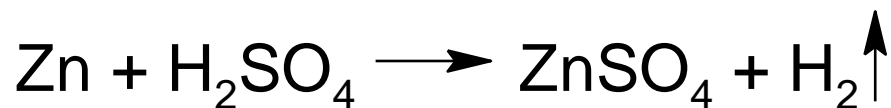
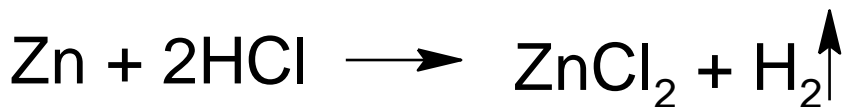


- maagaasi
lagundamisel
 $\text{CH}_4 \rightarrow \text{C} + 2\text{H}_2$



Vesiniku saamine laboris

- Metall reageerimisel happega Kippi aparatis

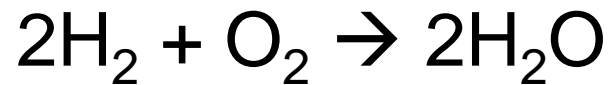


Vesiniku kasutamine



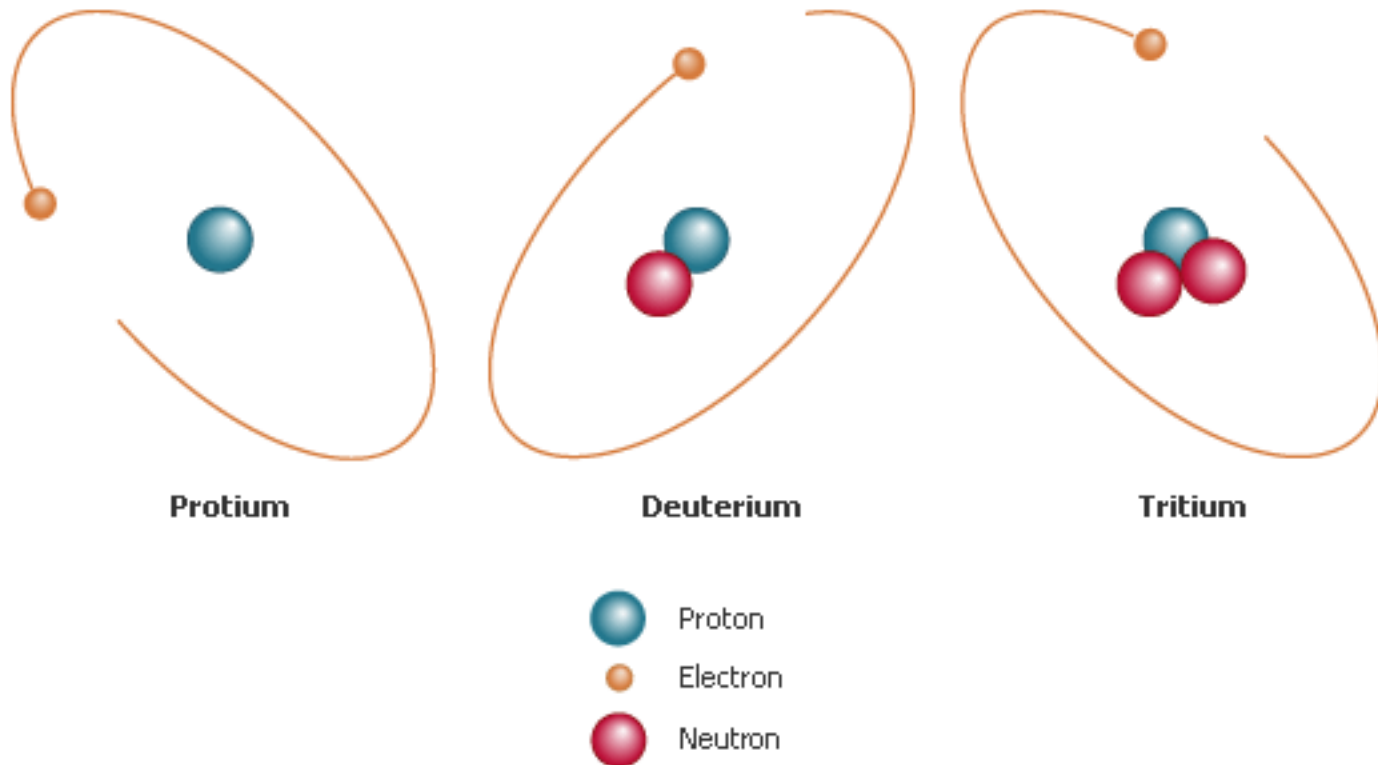
Paukgaas

- Vesiniku segu hapniku või õhuga
- Plahvatusohtlik
- [video1](#), [video2](#)

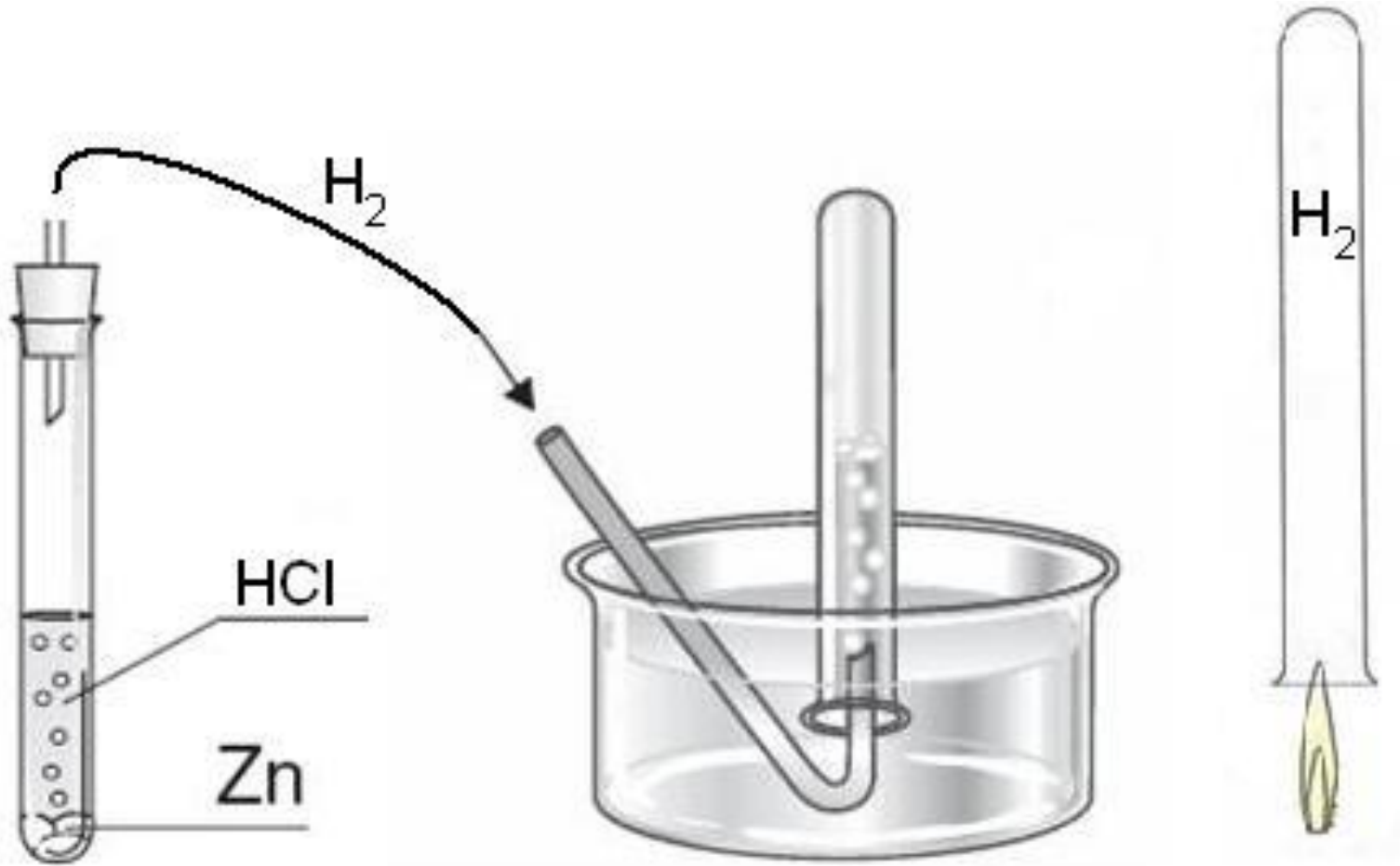


Vesiniku isotoobid

- Isotoobid – elemendi teisendid, mille tuumas on erinev arv neutroneid



Vesiniku saamine laboris ja puhtuse kontroll



Vesinik kui tulevikukütus

