

Title (en)  
Electrolytic cell

Title (de)  
Elektrolysezelle

Title (fr)  
Électrolyseur

Publication  
**EP 2746429 A1 20140625 (DE)**

Application  
**EP 12198034 A 20121219**

Priority  
EP 12198034 A 20121219

Abstract (en)

The electrolytic cell comprises an anode compartment (2) with an anode (3) and a cathode gas compartment with a gas diffusion cathode. The anode and the cathode are separated from each other by an ion exchange membrane (4). A metallic elastic element is clamped under compression between the back wall of the cathode gas compartment and the gas diffusion cathode. The elastic element is clamped into the cathode gas compartment such that a distance between the element and the back wall increases in the direction of gravity. The contract pressure increases from 1 kPa to 20 kPa. The electrolytic cell comprises an anode compartment (2) with an anode (3) and a cathode gas compartment with a gas diffusion cathode. The anode and the cathode are separated from each other by an ion exchange membrane (4). A metallic elastic element is clamped under compression between the back wall of the cathode gas compartment and the gas diffusion cathode. The elastic element is clamped into the cathode gas compartment such that a distance between the element and the back wall increases in the direction of gravity. The contract pressure increases from 1 kPa to 20 kPa. A difference between the contact pressure exerted by the elastic element on the gas diffusion cathode and the hydrostatic pressure in the anode compartment is less than 2 kPa at two opposed points each. A percolator (5) is provided between the gas diffusion cathode and the ion exchange membrane. The elastic elements are shaped as coils, composites, windings, woven, knit or crocheted mats, webs, pads or cushions, and have an outer fabric and an inner fabric. The inner fabric is shaped as a coil or a winding, and has a resilient effect. The outer fabric holds together the inner fabric. The elastic elements are clamped into the cathode gas compartment via a support structure. The support structure is of the cascade-type or flat. An independent claim is included for a process for carrying out electrolysis process.

Abstract (de)

Vorgeschlagen wird eine Elektrolysezelle enthaltend eine Anodenkammer mit einer Anode und eine Kathodengaskammer mit einer Gasdiffusionskathode, die voneinander durch eine Ionenaustauschmembran getrennt sind, sowie einem metallischen Elastikelement, das unter Kompression zwischen der Rückwand der Kathodengaskammer und der Gasdiffusionskathode eingespannt ist, welche sich dadurch auszeichnet, dass besagtes Elastikelement so in den Kathodengasraum eingespannt ist, dass der Abstand zwischen dem Element und der Rückwand in Schwerkraftrichtung zunimmt.

IPC 8 full level  
**C25B 1/46** (2006.01); **C25B 9/19** (2021.01)

CPC (source: EP)  
**C25B 1/46** (2013.01); **C25B 9/19** (2021.01); **C25B 9/65** (2021.01)

Citation (applicant)

- US 6117286 A 20000912 - SHIMAMUNE TAKAYUKI [JP], et al
- EP 0872578 B1 20021016 - BAYER AG [DE]
- EP 0050373 A1 19820428 - ORONZIO DE NORA IMPIANTI [CH]
- EP 0124125 A2 19841107 - ORONZIO DE NORA IMPIANTI [IT]
- DE 10138214 A1 20030220 - BAYER AG [DE]
- US 5676808 A 19971014 - NISHIKI YOSHINORI [JP], et al
- JP 2004300554 A 20041028 - CHLORINE ENG CORP LTD, et al
- JP 2003041388 A 20030213 - ASS FOR THE PROGRESS OF NEW CH
- EP 1882758 A1 20080130 - TOAGOSEI CO LTD [JP], et al

Citation (search report)

- [IY] US 4377455 A 19830322 - KADIJA IGOR V, et al
- [X] US 2002189936 A1 20021219 - SHIMAMUNE TAKAYUKI [JP]
- [I] EP 0072907 A1 19830302 - UHDE GMBH [DE]
- [I] US 884653 A 19080414 - GABRIEL GEORGE A [US]
- [YD] EP 1882758 A1 20080130 - TOAGOSEI CO LTD [JP], et al
- [A] US 2006042935 A1 20060302 - HOUDA HIROYOSHI [JP], et al

Cited by

DE102021103877A1; WO2022175010A1; DE102021103699A1; WO2022175011A1; DE102022130401A1; WO2024104622A1; DE102021103185A1; WO2022171411A1; EP4123057A1; WO2023001723A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2746429 A1 20140625**; WO 2014095507 A1 20140626

DOCDB simple family (application)

**EP 12198034 A 20121219**; EP 2013076174 W 20131211