

Title (en)
IONICALLY CONTROLLED THREE-GATE COMPONENT

Title (de)
IONISCH GESTEUERTES DREITORBAUELEMENT

Title (fr)
COMPOSANT À TROIS PORTS À COMMANDE IONIQUE

Publication
EP 2591514 A1 20130515 (DE)

Application
EP 11754280 A 20110603

Priority
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Abstract (en)
[origin: WO2012003821A1] The invention relates to a three-gate component which can be switched by the motion of ions. The three-gate component comprises a source electrode (3), a drain electrode (3), and a channel (2) which is connected between the source electrode and the drain electrode and which is made of a material having an electronic conductivity that can be changed by supplying and/or removing ions. According to the invention, the three-gate component has an ion reservoir (5) which is contacted by means of a gate electrode and is connected to the channel in such a way that the ion reservoir (5) can exchange ions with the channel when a potential is applied to the gate electrode. It has been recognized that information can be stored in the three-gate component in the distribution of the total ions present in the ion reservoir and in the channel between the ion reservoir and the channel. The distribution of the ions between the channel and the ion reservoir changes if and only if a corresponding driving potential is applied to the gate electrode. Therefore, in contrast to RRAMs, there is no time-voltage dilemma.

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Citation (search report)
See references of WO 2012003821A1

Citation (examination)
• US 2008149911 A1 20080626 - KARG SIEGFRIED F [CH], et al
• US 2008251777 A1 20081016 - BEDNORZ GEORG J [CH], et al
• US 4839700 A 19890613 - RAMESHAM RAJESHUNI [US], et al

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