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(54) **METHOD OF FORMING BOTTOM ELECTRODES FOR USE WITH METAL OXIDE RESISTIVITY SWITCHING LAYERS**

VERFAHREN ZUR HERSTELLUNG VON BODENELEKTRODEN ZUR VERWENDUNG MIT
METALLOXIDWIDERSTANDSSCHALTSCHICHTEN

PROCÉDÉ DE FABRICATION D'ÉLECTRODES INFÉRIEURES POUR UNE UTILISATION AVEC
DES COUCHES À COMMUTATION DE RÉSISTIVITÉ D'OXYDE MÉTALLIQUE

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(56) References cited:
US-A1- 2006 250 837 US-A1- 2008 210 924
US-A1- 2008 278 990

• **AN CHEN ET AL: "Non-volatile resistive**
switching for advanced memory applications",
IEDM TECHNICAL DIGEST 2005, IEEE,
PISCATAWAY, NJ, USA, 5 December 2005
(2005-12-05), pages 746-749, XP010903660, ISBN:
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