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(54) **Title:** NON-VOLATILE MEMORY WITH OXYGEN SCAVENGER REGIONS AND METHODS OF MAKING THE SAME

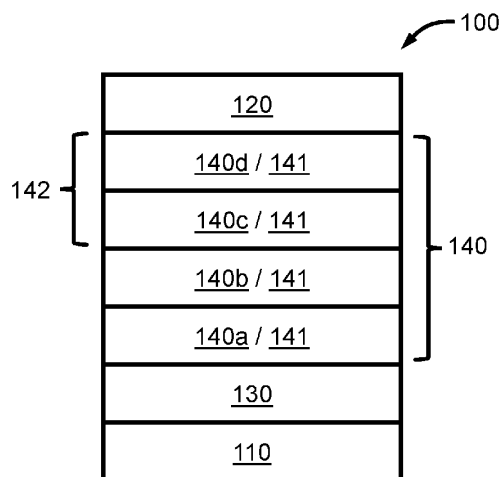


FIG. 1

(57) **Abstract:** A non-volatile memory includes: a buffer region in direct contact with a first electrode; and a principal memory region between the second electrode and the buffer region. The principal memory region includes: a first active region disposed in direct contact with the buffer region; a second active region with a second oxygen concentration that is lower than a first oxygen concentration of the first active region; a first scavenger region formed with a third oxygen concentration that is lower than the second oxygen concentration; and a second scavenger region disposed in direct contact with the second electrode, the second scavenger region being formed with a fourth oxygen concentration. Each of the second active region and the second scavenger region is disposed in direct contact with the first scavenger region, the second active region and the second scavenger region being formed physically spaced apart from one another.

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