CLAIMS

[Claim 1] A magnetic recording medium comprising a substrate, a first seed layer comprising Ru and having a (002)-oriented hexagonal closest packed structure, a second seed layer comprising ZnO, a third seed layer comprising MgO, and a magnetic recording layer comprising an ordered alloy, in this order.

[Claim 2] The magnetic recording medium according to Claim 1, further comprising an orientation controlling layer between the substrate and the first seed layer.

[Claim 3] The magnetic recording medium according to Claim 1, further comprising a non-magnetic intermediate layer consisting of Pt between the first seed layer and the second seed layer.

[Claim 4] The magnetic recording medium according to Claim 1, wherein the ordered alloy is an $L1_0$ ordered alloy comprising at least one element selected from the group consisting of Fe and Co, at least one element selected from the group consisting of Pt, Pd, Au, Ir and Rh.

[Claim 5] The magnetic recording medium according to Claim 4, wherein the ordered alloy further comprises at least one element selected from the group consisting of Ni, Mn, Cu,

Ru, Ag, Au, and Cr.

[Claim 6] The magnetic recording medium according to Claim 4, wherein the ordered alloy is the $L1_0$ ordered alloy selected from the group consisting of FePt, CoPt, FePd and CoPd.

[Claim 7] The magnetic recording medium according to Claim 1, wherein the magnetic recording layer has a granular structure comprising magnetic crystal grains and a non-magnetic crystal grain boundary surrounding the magnetic crystal grains, and the magnetic crystal grains comprise the ordered alloy.

[Claim 8] The magnetic recording medium according to Claim 7, wherein the non-magnetic crystal grain boundary comprises a non-magnetic material selected from the group consisting of carbon, boron, an oxide and a nitride.