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(54) Title: PROCESSES FOR FORMING DOPED-METAL OXIDES THIN FILMS ON ELECTRODE FOR INTERPHASE CON-
TROL

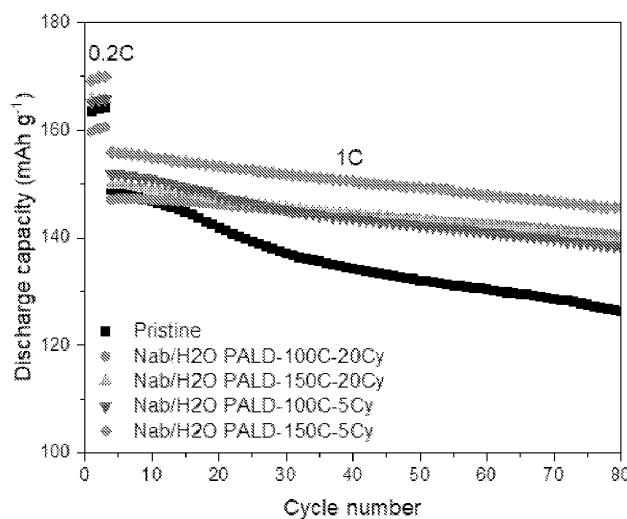


FIG. 1

(57) Abstract: This invention provides a novel solution to form an artificial interphase on the electrode to protect it from fast declining electrochemical behaviors, by depositing Doped-Metal Oxides Layer, by ALD or CVD. Metals discussed here are IVA-VIA elements (Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W) and dopants includes here B, Al, C, Si, N, P, S, allowing the oxide network to be porous, which may be favored by the presence of the dopant. The film also needs to be thin, possibly discontinuous, and lithium ion conductive enough, so that the addition of this thin film interface allows fast lithium ion transfer at the interface between electrode and electrolyte.

[Continued on next page]

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