Fabrication of V_2O_5 nanowire channels with uni-directional alignment and Effect of the alignment on the electrical stability of the nano device

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The V_2O_5 nanowire channels with a controlled nanowire length as well as the alignment could be obtained via gas flow in the N_2 blowing step for removing excess V_2O_5 ink and following selective transfer of the nanowires from the relief region of PDMS. Between two different devices, whose channel is parallel or perpendicular to the orientation of the patterned nanowire, where the nanowires are aligned along the channel (parallel device) or those are randomly oriented (serial device), the larger hysteresis and instability were observed in the serial device. The origin of hysteresis was discussed.