†Electronic Supplementary Information (ESI) available:

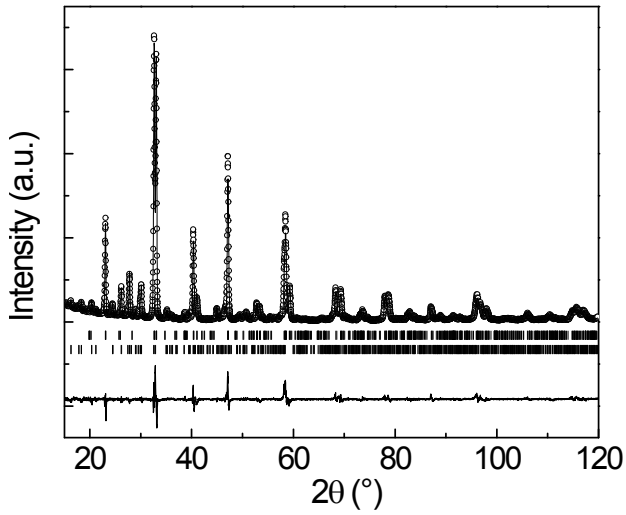

Figure S1: Rietveld refinement of the PXRD pattern at room temperature for a sample with stoichiometry $La_3Co_2VO_9$ synthesized by sol gel method. Main phase: $LaCo_{0.73}V_{0.27}O_3$; impurity phase: $LaVO_4$.

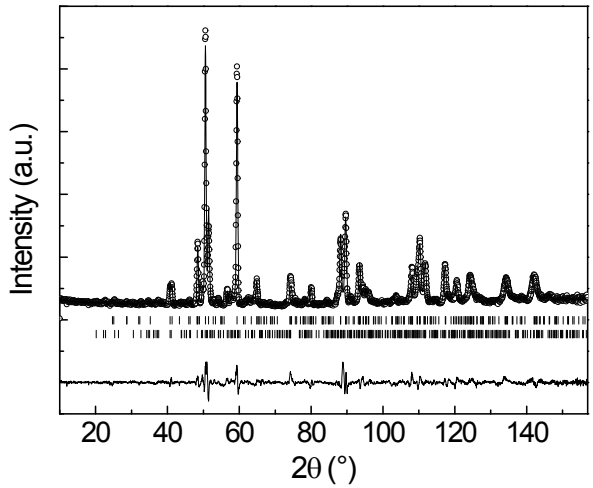

Figure S2: Rietveld refinement of PND pattern at room temperature for a sample with stoichiometry $La_3Co_2VO_9$ synthesized by sol gel method. Main phase: $LaCo_{0.73}V_{0.27}O_3$; impurity phase: $LaVO_4$.

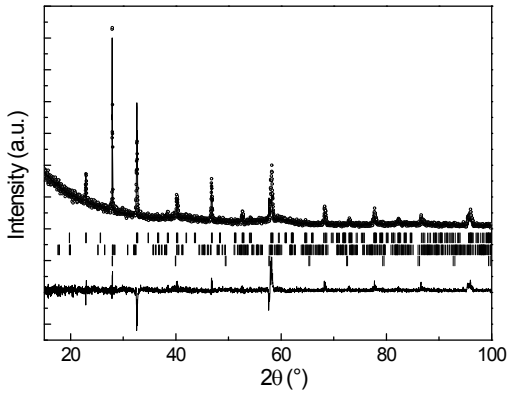

Figure S3: Rietveld analysis of PXRD pattern for the thermogravimetric solid residue. Vertical marks correspond to the position of the allowed Bragg reflections. Upper marks: $LaCoO_3$ (61.3(2)%); Middle marks: V_2O_5 (13.5(2)%);

Lower marks: La_2O_3 (25.2(1)%). Due to the high preferential orientation produced by sample preparation on the zero background sample holder (Silicon single crystal), the percentages are not close to the theoretical ones (47,5% for $LaCoO_3$, 7,5% for V_2O_5 and 45% for La_2O_3), but all the reflections can be explained with the proposed compounds.

Structural information derived from the crystal structure refinement of $LaCo_{0.71(1)}V_{0.29(1)}O_{2.97(3)}$ has been deposited at the ICSD Fachinformationszentrum Karlsruhe (FIZ) (E-mail: CrysDATA@FIZ.Karlsruhe.DE), with ICSD file number 428836 (for $LaCo_{0.71(1)}V_{0.29(1)}O_{2.97(3)}$ at 300 K).

See DOI: 10.1039/b000000x/