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An efficient multidoped  $\text{Cu}_{0.39}\text{Zn}_{0.14}\text{Co}_{2.47}\text{O}_4\text{-ZnO}$  electrode attached on reduced graphene oxide and copper foam as superior lithium-ion battery anodes

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**An efficient multidoped Cu<sub>0.39</sub>Zn<sub>0.14</sub>Co<sub>2.47</sub>O<sub>4</sub>-ZnO electrode attached on reduced graphene oxide and copper foam as superior lithium-ion battery anodes**

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**Abstract**

Metal-organic frameworks (MOFs) are very promising self-sacrificing templates to develop the large-scale fabrication of new functional materials for energy conversion and storage. In this study, novel multidoped porous mixed metal oxides Cu<sub>0.39</sub>Zn<sub>0.14</sub>Co<sub>2.47</sub>O<sub>4</sub>-ZnO nanoparticles were successfully fabricated through one-step pyrolysis of a polymetallic zeolitic imidazolate framework attached on reduced graphene oxide (RGO) and copper foam. The obtained Cu<sub>0.39</sub>Zn<sub>0.14</sub>Co<sub>2.47</sub>O<sub>4</sub>-ZnO/RGO/Cu composites can be directly used as binder-free anode material for lithium-ion battery for the first time, exhibiting a high reversible capacity of 1762 mAh g<sup>-1</sup> at a current density of 0.1 A g<sup>-1</sup> after 500 cycles with outstanding cycling stability. Such an impressive performance should benefit from the

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