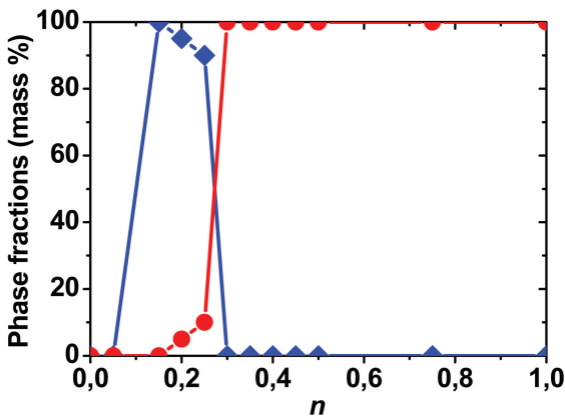


**Fig. 1** Phase fractions of the materials in the solid products from Series A (amine present) as a function of the relative amount of Co,  $n$ , in the reaction mixtures:  $[\text{CH}_3\text{NH}_3][(\text{Co}_x\text{Zn}_{1-x})_4(\text{PO}_4)_3]$ , blue square; hopeite,  $(\text{Co}_x\text{Zn}_{1-x})_3(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ , green star;  $\text{Co}_{2.59}\text{Zn}_{0.41}(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$  1, red triangle; amorphous powder, orange diamond;  $\text{Co}_3(\text{HPO}_4)_2(\text{OH})_2$ , black circle. The lines are sketched as a guide to the eye.



**Fig. 2** Phase fractions of the materials in the solid products from Series B (amine absent) as a function of the relative amount of Co,  $n$ , in the reaction mixtures:  $\text{Co}_{0.72}\text{Zn}_{2.28}(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$  2, blue diamonds and  $\text{Co}_7(\text{HPO}_4)_4(\text{PO}_4)_2$ , red circles. The lines are sketched as a guide to the eye.