



**FIGURE A1.** (a–c) Plots of Cu, Ni and Co apfu versus Fe apfu for mackinawites listed in Table A3 showing scattergrams (d) plot of Co versus Ni apfu for mackinawites listed in Supplementary Data 3 showing lack of any correlation (e) scattergram of Cu versus (Co+Ni) apfu for mackinawites listed in Table A3.