

# All-metal $\eta$ -antiaromaticity in dimeric cluster anion $\{[\text{CuGe}_9\text{Mes}]_2\}^{4-}$

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In this work, we report a dimeric cluster anion,  $\{[\text{CuGe}_9\text{Mes}]_2\}^{4-}$ , which was isolated as the  $[\text{K}(2,2,2\text{-crypt})]^+$  salt and characterized by using single-crystal X-ray diffraction and ESI mass spectroscopy. The title cluster represents the first locally  $\eta$ -antiaromatic compound in the solid state, as well as the first heteroatomic antiaromatic compound. This journal is © The Royal Society of Chemistry.