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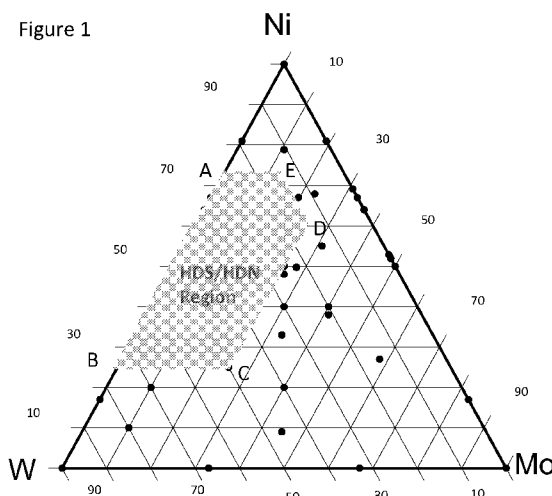
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(54) Title: HYDROCONVERSION MULTI-METALLIC CATALYST AND METHOD FOR MAKING THEREOF

Figure 1



(57) Abstract: The invention relates to a self-supported mixed metal sulfide (MMS) catalyst for hydrotreating hydrocarbon feedstock and to a method for preparing the catalyst. The catalyst can be any of: a bi-metallic catalyst consisting essentially of nickel sulfide and tungsten sulfide, with Ni:W in a mole ratio of 1:3 to 4:1, on a transition metal basis; a bi-metallic catalyst consists essentially of molybdenum sulfide and tungsten sulfide, with at least 0.1 mol% of Mo and at least 0.1 mol% of W, on a transition metal basis; or a tri-metallic catalyst ratios with components Ni:Mo:W in a region defined by five points ABCDE of a ternary phase diagram: A (Ni=0.72, Mo=0.00, W=0.25), B (Ni=0.25, Mo=0.00, W=0.75), C (Ni=0.25, Mo=0.25, W=0.50), D (Ni=0.60, Mo=0.25, W=0.15), E (Ni=0.72, Mo=0.13, W=0.15). The catalyst is characterized as having multiple phases for enhanced HYD and HYL activities, and outstanding HDN and HDS performance.



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