

身材料总的趋势是朝着向多频谱兼容隐身性能方向发展,单波段隐身材料已很难获得广泛应用。目前国外研究的热红外兼容多频谱隐身材料有:涂敷型多波段隐身材料、薄膜型多频谱隐身材料、宽波段能量吸收伪装毯、掺杂半导体材料和纳米材料,其中涂敷型隐身材料和纳米材料是近期国内外研究的热点和难点。

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金属表面新型涂料

本成果研制的钢铁构件防锈涂料为水性涂料。油性涂料防锈机理属遮盖型,防锈效果不理想,现场操作不便,劳动条件恶劣,污染环境,而水性涂料防锈效果好,涂覆容易,节省工料,无污染。因此,水性涂料的应用推广迅速,应用量已占涂料总应用量的 30% 以上。

本成果为乳胶水性涂料。它采用多元合成树脂共聚乳液为基料,以水做分散介质,加入各种防锈添加剂和助剂,依据化学转化机理配制而成。它可直接涂覆于带锈的钢铁表面,将铁锈转化为稳定的络合物附着于钢铁表面,形成连续致密的保护性封闭层,达到防锈目的。它附着力强,其防锈、防水、耐热性能优于其它漆类。

该涂料无毒无味,无污染;可直接在带锈工件表面涂覆,无需喷砂、去锈、磷化、纯化工序;不需有机溶剂,工具可用清水洗,节省工料 30% 以上;涂覆面积大,干燥时间短;涂层不渗色、不脱落;可与各类漆配套使用;防锈效果好。

本成果可用于船舶、石化、车辆、锅炉、机械、桥梁、钢窗、建筑、水利及航空、航天、兵器等行业的钢铁构件的防锈保护。水泥构件上使用效果也较好。经济效益、社会效益良好。

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