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What Influence Corrosion Behaviors of Electrogalvanized and Chromate Conversion Coatings?

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Electrogalvanized coatings have been used widely in many applications, ranging from automotive parts to construction and electronic components. With more demanding corrosion-protection requirements today, galvanized coatings are being developed for increased durability in harsher environments, such as marine and corrosive soils. In this presentation, key parameters that control corrosion behavior of the galvanized coatings will be discussed in relevant to the approach to improve corrosion properties of the materials. Among others, these include coatings' thickness, alloying elements, crystallographic texture, and structure of top-coat conversion coatings. The discussion will be drawn from the author's past 10 years of research as well as leading research in this field.