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ABBREVIATIONS AND SYMBOLS

AFM	Atomic Force Microscopy
APS	γ -Aminopropyl Silane
ASTM	The American Society for Testing and Materials
BTSE	<i>1,2</i> -bis(triethoxysily) Ethane
CCT	Cyclic Corrosion Test
CMC	Critical Micelle Concentration
CRS	Cold-Rolled Steel
DI	Deionized Water
EG	Electrogalvanized Steel
EIS	Electrochemical Impedance Spectroscopy
FTIR	Fourier Transform Infrared Spectroscopy
MA	Myristic Acid
MCA	<i>16</i> -mercapto- <i>1</i> - hexadecanoic Acid
MUO	<i>11</i> -mercapto- <i>1</i> -undecanol
NMPRT	<i>N</i> -methyl Pyrrolidone Paint Retention Time
OA	Oleic Acid, or Sodium Oleate
OCP	Open Circuit Potential
ODT	<i>1</i> -Octadecanethiol
OIC	Octadecyl Isocyanate
OP	Octadecyl Phosphonic Acid
OTS	Octadecyl triethoxyl silane
P	Phosphated EG Steel
PA	Palmitic Acid
POSCO	Pohang Iron & Steel Company, Korea
QCM	Quartz Crystal Microbalances
SA	Stearic Acid
SAM	Self-Assembled Monolayer
SST	Salt Spray Test
UA	<i>10</i> -undecenoic Acid
UH	<i>10</i> -undecenyl Hydroxamate
VS	Vinyl Silane
VT	Virginia Tech
XPS	<i>X</i> -Ray Photoelectron Spectroscopy

θ	Contact angle, degrees
i_{corr}	Corrosion current density, $\mu\text{A}/\text{cm}^2$
E_{corr}	Corrosion potential, mV
γ	Surface free energy or surface tension, mJ/m^2
γ^{AB}	Polar Acid-base Component of Surface Tension, mJ/m^2
γ^{LW}	Nonpolar component of surface tension, mJ/m^2
γ^+	Acidic component of surface tension, mJ/m^2
γ^-	Basic component of surface tension, mJ/m^2
γ_c	Critical surface tension, mJ/m^2
Z'	Real impedance
Z''	Imaginary impedance
R_p	Polarization resistance, $\text{k}\Omega$
R_Ω	Ohmic resistance of solution, $\text{k}\Omega$
R_d	Resistance of coating defects, $\text{k}\Omega$
C_{dl}	Capacitance of electrical double layer
C_c	Capacitance of a coating
W_a	Adhesion work, mJ/m^2
W_c	Cohesion work, mJ/m^2
δ	Film thickness, μm