

Medea Kosian

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Project	Surface modification of SS316L
Fields of interest	Surface modification, organic synthesis, application
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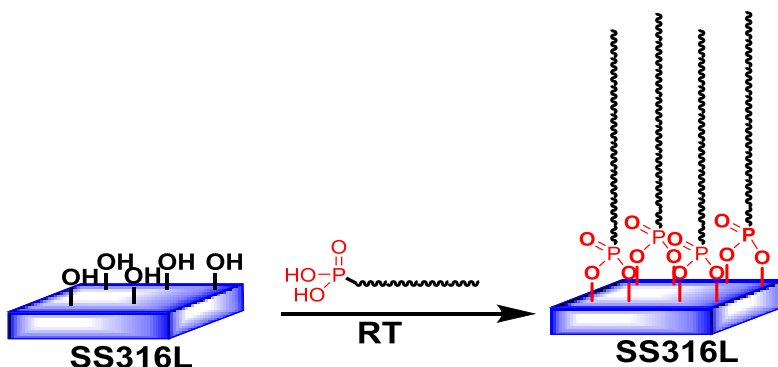


Introduction

Modification of stainless steel surfaces to improve surface properties or durability is an interesting and important avenue of research, as stainless steel is a material widely used in both industry and scientific enterprise with applications ranging from shipping and marine industry to food processing. Phosphonic acids form particularly strong bonds to metal oxides including marine grade stainless steel (SS316L). Of special interest to this project are the wettability and stability of the alkylphosphonic acid monolayers under typical SS316L use conditions, which include such harsh environments as strong base (pH 12), acid, and prolonged heating.

Goal

To study the modification of SS316L surfaces with alkylphosphonic acids of varying chain lengths, as well as their behaviour under prolonged exposure to acid, alkali, heat, physiological buffers, and water to simulate the actual use conditions of marine and industrial grade steel.



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