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On Tuesday, June 12, 2012, in the Assembly Hall of the Faculty of Technical Sciences Novi Sad at 12:00 pm will deliver

P R E D A V A N J E
L E C T U R E

AC induced corrosion and its modeling

Abstract: The modeling of corrosion poses particular difficulties. The understanding of corrosion as an electrochemical process has led to simple capacitive-resistive models that take into account the resistance of the electrolytic cell and the capacitive effect of the surface potential at the interface between conductors and the electrolyte. In some models, nonlinear conduction effects have been added to account for more complex observed behavior. While these models are sufficient to describe the behavior in systems with cathodic protection, the behavior in the presence of induced AC currents from power lines and from RF sources cannot be accounted for and are insufficient to describe the effects observed in the field. Field observations have shown that a rectifying effect exists that affects the efficacy of cathodic protection and this effect is responsible for corrosion in the presence of AC currents. The talk discusses existing models and proposed models and gives a general introduction to the problem and attempts at its understanding and eventual solutions.

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