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# Mechanism studies of hydrazine electro-oxidation by a platinum ultramicroelectrode: effects of supporting electrolytes

Guoqing Yue, Qiang Zeng, Jianzhi Huang, Lishi Wang\*

School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510641, People's Republic of China

Email: wanglsh@scut.edu.cn, Tel: +86 020 87112906

## ABSTRACT

The effects of the supporting electrolyte on electro-catalytic reaction of hydrazine hydrate (HH) were studied by a platinum ultramicroelectrode. We found that the  $H^+$  electric field generated during the catalytic process can partly hinder the reactants from participating in the catalytic reaction by using low concentration supporting electrolytes. It results in the final steady current value is less than the theoretical value. On the other hand, supporting electrolyte has a regulatory effect on both concentrations of  $N_2H_4$  and  $N_2H_5^+$  (protonated HH) involved in catalytic reaction, which in turn affects the number of steady state currents and the value of each steady state current generated in the reaction. In this case, the effect of neutral salts did not change with concentration variations. By contrast, when different concentrations of sulfuric acid or sodium hydroxide are used as the electrolytes, the number of steady state currents and the value of each steady state current are mainly determined by the

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