

Chemical sensor array modeling

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Abstract : The aim of this paper is to find useful relationships that describe the electrochemical behavior at the interfaces chemical gas sensors/ vapor mixture. By using the Gibbs Duhem formalism, equations of state in differential form that link the variations of the sensors partial sensitivities to the gas component concentrations were developed. Furthermore, functions of state that relates the input variables e.g. gas mixture components concentrations to the output e.g. sensor array responses were deduced

Keywords : chemical sensor array, gas mixture, modeling, Sensitivity, Gibbs Duhem equations, Clifford's empirical model