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# Chromatographic Separation of Anions Using Inverse Photometric Detection

Samuel R. Hochstetler

*Indiana University - Purdue University Fort Wayne*

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## **Chromatographic separation of anions using inverse photometric detection**

Samuel R. Hochstetler

Michael R. Columbia

Chemistry

Indiana University-Purdue University Fort Wayne

Separation of common anions like chloride, bromide and nitrate is achieved using ion exchange chromatography. Detection of these ions as they exit the ion exchange column is frequently based on changes in the conductivity of the outflowing stream. This requires a dedicated conductivity detector and a second column to suppress the native conductance of the mobile phase. Due to the cost of these items we have attempted to achieve similar separations using an existing detector which measures the absorbance of light. To detect light-transparent ions like chloride, a light-absorbing species is added to the mobile phase. When the transparent ions exit the column, the light-absorbing species is diluted and the absorbance of light decreases. Such a detection scheme is called inverse photometric detection. We report results using various light-absorbing species (e.g., benzoate, salicylate, hydroxybenzoate, phthalate, etc.) and their effectiveness in separating chloride, bromide and nitrate on an unmodified high performance liquid chromatograph.