

## Dynamic Concentration and Separation by Isoelectric Focusing in Microfluidic Channel

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A major focus in biochemistry is to explore the remarkable range of functions of proteins, because they play an important role in nearly all biological process. Thus, nowadays, many efforts are engaged into new proteomic analysis tools. A trend in microfluidics is integration of these proteins exploration techniques on lab-on-chip for micro total analysis systems ( $\mu$ -TAS). To handle very small volumes is the promise of a great breakthrough in medical analysis. To separate and concentrate proteins in complex mixture, the Process Analysis Laboratory is developing an easy-to-fabricate solution integrated in a microfluidic device.

In this study, we are targeting proteins concentration and separation of proteins on the basis of isoelectric focusing (IEF). We have designed and developed a polydimethylsiloxane (PDMS) microchip where dynamic pH gradient is successfully generated by varying the pH of buffer solution and biological particles (RFP-SBD Fusion proteins) in buffer solution undergo concentration and separation in a channel formed by electrodes.