

## Film formation – Layer-by-layer assembly (LbL)

**Layer-by-layer deposition was and still is one of the most common applications for SPR spectroscopy. In scan-mode SPR will give information about the film thickness on the metal substrate.**

LbL of polyelectrolyte multilayers (PEM) is a versatile technique used to fabricate multilayer thin films with tailored properties. First reported in 1991 by Decher et al. polyelectrolyte multilayers find more applications as substrates or coatings. Recent findings demonstrate that different multilayer architectures can promote protein and cell adsorption.

a)  
Kinetic mode SPR scans of the successive deposition of  $G_2(L\text{-lysine})_8$  and succinic acid modified Au nanocrystals (average diameter  $d_0 \approx 2$  nm). The gray curves indicate the addition of  $G_2(L\text{-lysine})_8$  and the black curves the addition of succinic acid modified Au nanocrystals, respectively. In between each deposition, rinsing steps removed small amounts of physically adsorbed material.

b)  
Scan mode SPR spectroscopy after the consecutive deposition of  $G_2(L\text{-lysine})_8$ /Au nanocrystals up to 4 bilayers.

