The authors present a scheme intended for production of large quantities of lab on chip systems by means of Si dry etching, electroplating, injection molding, and pressure-assisted thermal bonding. This scheme allows for the fabrication of large numbers of samples having a combination of structures with depths as small as tens of nanometers and as big as hundreds of microns on the same polymer chip. The authors also describe in detail the fabrication procedure of polymer substrates with embedded Au and pedot:tosylate electrodes for electrochemical applications. The electrode fabrication process is simple and fit for integration in a production scheme. The electrode–substrates are then bonded to injection molded counterparts to be used for electrochemical applications. A dimensional and functional characterization of the electrodes is also presented here.