The magnetic properties of pulse reverse (PR) electroplated CoNiFe and DC electroplated NiFe are presented. CoNiFe is a very promising material for magnetic microsystems due to the possibility of achieving a high saturation flux density (B-s) and a low coercivity (H-c). A new bath formulation has been developed, which by means of PR electroplating makes it possible to deposit high B-s CoNiFe with a low residual stress level. The magnetic properties have been determined using a new simple measurement setup that allows for wafer level characterization. The results have been validated by comparison to measurements performed with a vibrating sample magnetometer (VSM).