In this talk we consider the regularization of nonlinear operator equations $F(x) = y$. Assuming that the solution of the equation has a sparse expansion with respect to a preassigned frame or basis, we want to develop methods that also enforce a sparse reconstruction. This is usually not the case if e.g. Tikhonov regularization with a quadratic Hilbert space penalty term is used. Instead, we propose the use of a weighted $\ell_p$ norm, which allows for $p < 2$ sparse reconstructions. For $1 \leq p < 2$ we will propose iterative minimization strategies for the minimization of the Tikhonov functional by so called Surrogate functionals. We will also provide regularization parameter rules and give convergence and convergence rate results. Finally, some numerical results from medical imaging, the color inpainting problem and rotor dynamics will be presented.