The inverse problem is commonly formulated as an unconstrained optimisation problem of minimising an objective function. Traditionally, this function involves a data likelihood term and a regularisation term. Hitherto the choice of regularisation functional was performed heuristically by imposition of some prior information in $l_2$-norm (Tikhonov), or by employment of more advanced functional in $l_1$-norm (e.g. Total Variation). Although some may argue that the former may have some Bayesian interpretation and thus some justification, such regularisation obviously distorts the solution and similarly the solutions achieved using any ad-hoc functional would be subjective to the choice of that functional. We propose here a method in which the regularisation functional is learned from true examples. The inverse problem is reformulated so that the recovered parameters are represented by a sparse coefficients vector and a dictionary to comply with the principle of parsimony. This sparsity requirement is set as a constraint in $l_0$-norm equivalent and therefore the inverse problem is solved in a constrained optimisation framework. Preliminary results with ill-posed inverse problems were highly successful. Future work is to assess the performance of this radically new approach for the field of EIT. The success of this promising method would substantially improve the fidelity as well as the resolution of the acquired images in all range of soft-field imaging.