ICA etc - all these deal with model selection issues - see Riz's thesis and the intro to our 2001 book on the subject [attached]

Variational Methods for Bayesian Independent Component Analysis

Bayesian Methods for Sparse Data Decomposition and Blind Source Separation

Variational Bayesian Learning for Wavelet Independent Component Analysis.

Bayesian Independent Component Analysis with Constraints: an application in Biosignal Analysis
Lecture Notes in Computer Science, special issue on Machine Learning.

Learning Hierarchical Dynamics using Independent Component Analysis.
International Conference on Independent Component Analysis, Nara, Japan., 797-802.

Bayesian ICA with Hidden Markov Model Sources.
International Conference on Independent Component Analysis, Nara, Japan., 809-814.

Variational Bayesian Mixture of Independent Component Analysers for Finding Self-Similar Areas in Images.
International Conference on Independent Component Analysis, Nara, Japan., 107-112.

Independent Data Decomposition.

Variational Mixture of Bayesian Independent Component Analysers.
Neural Computation 15(1).

Data Decomposition using Independent Component Analysis with Prior Constraints.
**Flexible Bayesian Independent Component Analysis for Blind Source Separation.**  

**Mixtures of Independent Component Analysers.**  
[PDF version]

**Independent Component Analysis: principles and practice.**  

**Hidden Markov Independent Components Analysis for biosignal analysis.**  
Proceedings of MEDSIP-2000, International Conference on Advances in Medical Signal and Information Processing.

**Hidden Markov Independent Components Analysis.**  

**Particle Filters for Non-stationary ICA.**  

**Independent Component Analysis: A flexible non-linearity and decorrelating manifold approach.**  

**Independent Component Analysis: Source Assessment & Separation, a Bayesian Approach.**  

**PCA - like model selection**

**Inferring the eigenvalues of covariance matrices from limited, noisy data.**

+ there is much discussion in canonical texts on learning such as Bishop's *Machine Learning* book - highly recommended
+ look at work on probabilistic PCA