1125-35-38 **Michael Victor Klibanov*** (mklibanv@uncc.edu), Department of Mathematics and Statistics, University of North Carolina at Charlotte, Charlotte, NC 28223, and **Dinh Liem Nguyen**, **Loc Hoang Nguyen** and **Aleksandr Egor Kolesov**. *Globally convergent numerical methods for coefficient and phaseless inverse problems.*

Coefficient inverse problems are both ill-posed and nonlinear. These two factors cause the well known phenomena of multiple local minima and ravines of corresponding least squares Tikhonov functional. The latter means in turn that the convergence of any optimization to the exact solution cannot be rigorously proved unless a its starting point is located in a sufficiently small neighborhood of that solution. This is the so-called "local convergence". To the contrary, the group led by the first author has made a significant progress in the last eight years in the development of globally convergent numerical methods for these problems. In other words, theorems are proven which establish that each of these methods delivers some points in sufficiently small neighborhood of the exact solution without any a priori knowledge of this neighborhood. At least one of those methods will be presented, along with computational results. In addition, uniqueness theorems and reconstruction methods will be presented for coefficient inverse problems without the phase information. In fact, these problems are closely linked with the first topic. (Received June 10, 2016)