

**Kvalitativní vlastnosti řešení rovnic popisujících časově
proměnná proudění nestlačitelných chemicky reagujících tekutin**

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We study properties of solutions of generalized Navier-Stokes equations, which describes non stationary flow of incompressible chemically reacting fluid or incompressible fluid with impurity, whose viscosity depend on concentration of the impurity. We assume viscosity to be bounded from below with positive constant and lipschitz continuous with respect to the concentration. In two dimensional case we prove that second spatial derivatives of velocity and concentration lie in space $L^2(L^2)$ and first spatial derivatives are in space $L^\infty(L^2)$. We prove the result by transforming the system to the flat boundary problem, extension of the variables over the flat boundary and using second differences of concentration and velocity as test functions in the weak formulation.