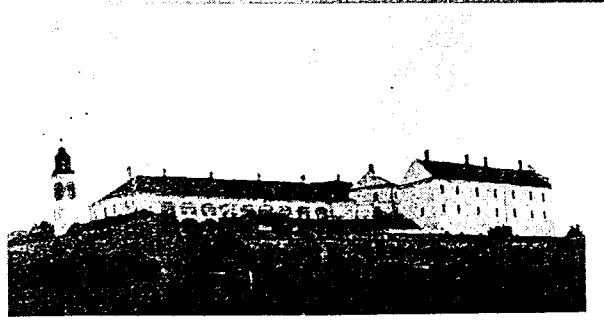


**ŠKOLA KERAMIKE**  
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**Tehnološki Fakultet**  
**Univerzitet u Novom Sadu**  
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**University of Novi Sad**



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## PRIMENA AKRILATA KAŌ VEZIVA U PROCESIRANJU $Al_2O_3$ TEHNIČKE KERAMIKE

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Tehnička keramika na bazi  $Al_2O_3$  ima široku primenu u industriji i tehnici; naročito je zastupljena primena proizvoda različitih oblika i osobina. Jedan od načina izrade proizvoda složenijih oblika je i mašinska obrada ispreska, čime se skupa obrada sinterovanog proizvoda dijamantskim alatom svodi se na minimum.

U ovom radu ispitana je mogućnost primene akrilata kao veziva u višekomponentnoj smeši praha  $Al_2O_3$  (Alcoa A-16) i organskih aditiva (deflokulant, vezivo i plastifikatori) kao i uticaj pritiska presovanja različitih smeša na osobine ispresaka i njihovu obradljivost. Kao akrilatna veziva korišćeni su polimetil metakrilat i metil metakrilat sa udelima od 2 i 4 masena procenta. Utvrđeno je da se dodatkom akrilata povećala homogenost i kompaktnost otpresaka, a time i njihova obradljivost. Termičkim tretmanom na  $115^\circ C$ , na temperaturi oko tačke ostakljivanja polimetil metakrilata, uzorci postaju pogodniji za mehaničku obradu, što je pokazano i na uzorcima većih dimenzija. Ispitivanja obradljivosti ispresaka obuhvatilo je nekoliko različitih načina obrade: struganje, glodanje, bušenje, urezivanje kanala, spoljašnjih i unutrašnjih navoja.

\* M.K. i D.M. su studenti doktorskih studija; ime mentora je podvučeno

## APPLICATION OF ACRYLATE AS A BINDER FOR PROCESSING OF TECHNICAL ALUMINA CERAMICS

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Alumina technical ceramics have very broad application in many industrial fields especially for application as products with different shapes and qualities. One of the ways to manufacture products with complicated shapes is machining of green pressed parts. This kind of preparing significantly reduce final costly machining of sintered products with diamond tools.

In this paper it was investigated the possibility of using the acrylate as a binders in multicomponent mixture of alumina powder (Alcoa A-16) and organic aditives (deflocculant, binders, plasticizers). Also, it was investigated the influence of different pressures and different mixtures on quality of pressed parts and their mashinability. Poly(methacrylate) and methyl methacrylate, used as binders, were added in a quantity of 2 and 4 mass proccents. It was found that homogeneity and strength of the pressed parts were improved, as well as their mashinability. After thermal treatment near glass transition temperature ( $115^\circ C$ ) pressed parts become more suitable for machining. It is also a case for the bigger samples. The machining of samples was made by: lathing, milling, drilling, channel indentation as well as the indentation of the outside and inside tapping.

\* M.K. and D.M. are graduate students (Ph.D.); name of the supervisor is underlined