Dielectric Properties of Polymeric Materials Based on Benzocyclobutene Derivatives

S. E. Balachenkova[a], G. E. Adamov[b,*], K. S. Levchenko[c,], A. Yu. Kalashnikov[d,***], P. S. Shmelin[b], and E. P. Grebennikov[b]**

[a] *MIREA – Russian Technological University (RTU – MIREA), Moscow, 119454 Russia*
[b] *JSC "Technomash," Moscow, 121108 Russia*
[c] *Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences, Moscow, 117393 Russia*
[d] *JSC "Russian Space Systems," Moscow, 111250 Russia*
**e-mail: adamov@cnititm.ru; **e-mail: k.s.levchenko@gmail.com; ***e-mail: kalashton@inbox.ru*

Received December 1, 2019; revised December 1, 2019; accepted January 15, 2020

Abstract—In this article the dielectric characteristics of polymer films based on two allyl-substituted silanes with a benzocyclobutene substituent and their copolymers with triethylene glycol dimethacrylate, addition of which made materials capable of photopolymerization, were studied. The obtained values of the dielectric constant (less than 2.9 at the frequency of 10 GHz) and the loss tangent (less than 3×10^{-3} at the frequency of 10 GHz) make the developed materials promising in terms of obtaining dielectric coatings during the technological processes and production of components for electronic devices.

Keywords: benzocyclobutene derivatives, dielectric constant, loss tangent

DOI: 10.1134/S1070363221120434