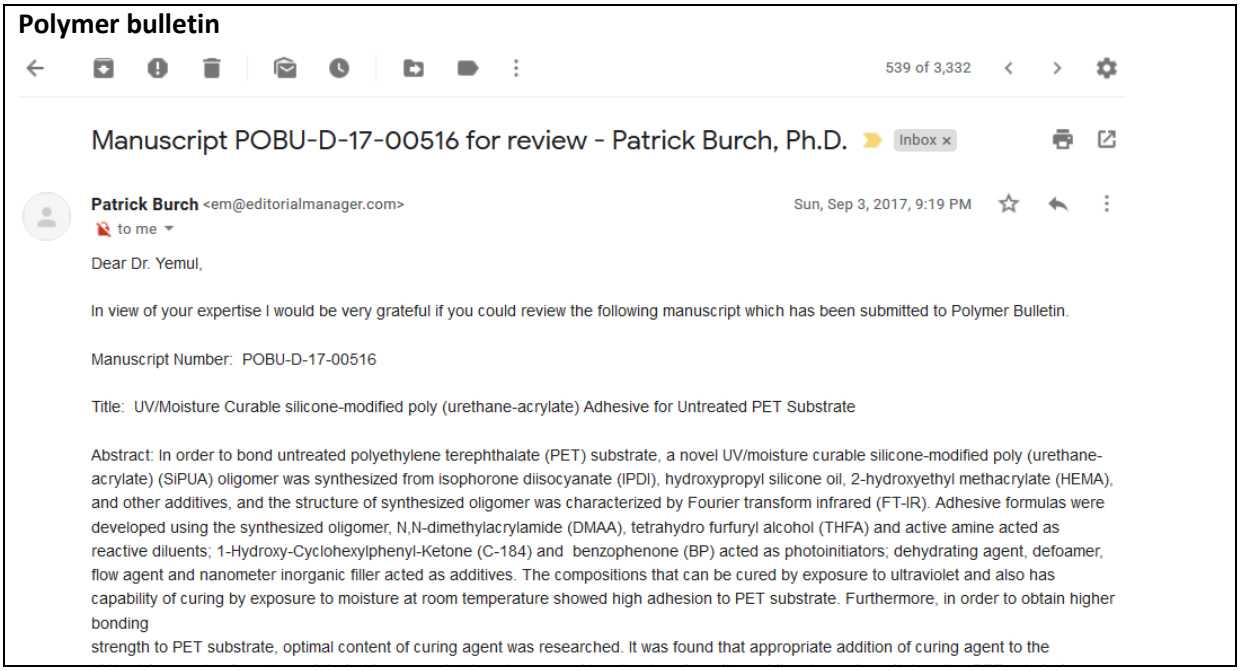
Polymer bulletin



539 of 3,332

Manuscript POBU-D-17-00516 for review - Patrick Burch, Ph.D. Inbox ×

Patrick Burch <em@editorialmanager.com> Sun, Sep 3, 2017, 9:19 PM

to me

Dear Dr. Yemul,

In view of your expertise I would be very grateful if you could review the following manuscript which has been submitted to Polymer Bulletin.

Manuscript Number: POBU-D-17-00516

Title: UV/Moisture Curable silicone-modified poly (urethane-acrylate) Adhesive for Untreated PET Substrate

Abstract: In order to bond untreated polyethylene terephthalate (PET) substrate, a novel UV/moisture curable silicone-modified poly (urethane-acrylate) (SiPUA) oligomer was synthesized from isophorone diisocyanate (IPDI), hydroxypropyl silicone oil, 2-hydroxyethyl methacrylate (HEMA), and other additives, and the structure of synthesized oligomer was characterized by Fourier transform infrared (FT-IR). Adhesive formulas were developed using the synthesized oligomer, N,N-dimethylacrylamide (DMAA), tetrahydro furfuryl alcohol (THFA) and active amine acted as reactive diluents; 1-Hydroxy-Cyclohexylphenyl-Ketone (C-184) and benzophenone (BP) acted as photoinitiators; dehydrating agent, defoamer, flow agent and nanometer inorganic filler acted as additives. The compositions that can be cured by exposure to ultraviolet and also has capability of curing by exposure to moisture at room temperature showed high adhesion to PET substrate. Furthermore, in order to obtain higher bonding
strength to PET substrate, optimal content of curing agent was researched. It was found that appropriate addition of curing agent to the