Continuous method for synthesis of polyimide sponge

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Polyimide sponge film has a uniform porous structure which can be applied in various industries. However, the synthesizing process used now is a batch system and hard to used in producing line in factory. Therefore, we in this study created a continuous process to synthesize polyimide sponge by studying its process in detail and divide it part by part. The newly invented method for polyimide sponge uses no autoclave during process and the final product shows great uniform structure. The spin coating rate was controlled by spin-coater rpm speed control to see the minimum thickness of the sponge. Its thermal properties were measured by TGA and DSC. Additionally, the porous structure was observed by FE-SEM. The polyimide sponge showed excellent thermal stability, chemical resistance and high porosity.