TAILORED SURFACE POROSITIES ON CERAMIC FOAMS

Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST) manabu-fukushima@aist.go.jp Akihiro Shimamura, National Institute of Advanced Industrial Science and Technology (AIST)

Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST)

Naoki Kondo, National Institute of Advanced Industrial Science and Technology (AIST)

Key Words: Ceramic foams, direct blowing and porosity.

Novel ceramic foams with tailored surface porosities have been prepared by direct blowing of powder compact, and followed by modulated gas release from the blown bodies. The processing methodologies to produce precisely controlled pore configuration have been discussed in terms of: the direct blowing of powder compacts with a phenoric resin, to form an array of interconnected spherical pores with various unique surfaces comprised of relatively denser, zebra-stripe type (denser and porous) and highly oriented grains, to provide improved mechanical strength and sufficient fluid permeability, that has been created by using one-pot blowing process. These simple and versatile approaches can be used to tailor pore configurations, and fabricate macroporous monoliths with various distinct characteristics.