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(71) Applicant: **PRAXAIR S.T. TECHNOLOGY, INC.** [US/US]; 441 Sackett Point Road, New Haven, CT 06473 (US).

(72) Inventors: **BELOV, Vladimir, V.**; 9402 Greenthread Lane, Zionsville, IN 46077-8148 (US). **BELOV, Irina**; 9402 Greenthread Lane, Zionsville, IN 46077-8148 (US).

(74) Agents: **DALAL, Nilay, S.** et al.; Praxair, Inc., 39 Old Ridgebury Road, Danbury, CT 06810 (US).

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(54) Title: AQUEOUS SLURRY FOR THE PRODUCTION OF THERMAL AND ENVIRONMENTAL BARRIER COATINGS AND PROCESSES FOR MAKING AND APPLYING THE SAME

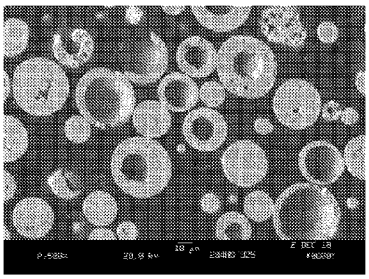

Figure 1 (Type A)

(57) Abstract: An improved slurry formulation for the production of a thermal and environmental barrier coatings are provided which can withstand high temperature applications. The slurry includes a combination of a coarse ceramic powder fraction having close porosity particles and a fine ceramic powder fraction. The combination of the two powders produces a bimodal particle size distribution having a controlled amount of closed porosity that imparts desirable properties to the coating produced. The finer solid particles are interdispersed within an aqueous binder to produce a ceramic matrix with sufficient mechanical strength. The closed porosity containing coarse particles are embedded within the resultant ceramic matrix and do not disintegrate under high temperature conditions to impart a temperature resistant, non-collapsing closed porosity to the coating which can also act as an environmental barrier..

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