DEVELOPMENT OF HIGH PERFORMANCE PORCELAIN AND ALUMINA FOAM STRUCTURE FOR POROUS MEDIUM BURNER

by

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LIST OF ABBREVIATIONS

3D	Three dimensions
AF	Air-fuel
CSD	Chemical solution deposition
CMC	Carboxy-methyl cellulose
CVD	Chemical vapour deposition
EDX	Energy dispersive X-ray
ICDD	International Centre for Diffraction Data
IR	Infra-red
PE-CVD	Plasma enhanced-chemical vapour deposition
PEG	Polyethylene glycol
PIM	Porous inert media
PMB	Porous medium burner
PVA	Poly(vinyl alcohol)
PVD	Physical vapour deposition
RBAO	Reaction bonded Al_2O_3
SEM	Scanning electron microscope
SRT	Sponge replication technique
syngas	Synthetic gas
TGA	Thermogravimetric analysis
UHC	Unburned hydrocarbon
XRD	X-ray diffraction
XRF	X-ray fluorescence

LIST OF UNITS AND SYMBOLS

A	Area
Al	Aluminum
Al_2O_3	Alumina
C	Geometric constant
C_p	Specific heat
CaO	Calcium oxide
CuO	Cupric/copper oxide
Cr	Chromium
CO/CO_u	Carbon oxides
d	diameter of open cell
F	Force/load
Fe_2O_3	Iron oxide
K	Thermal conductivity
k_R	Photon conductivity
k_p	Phonon conductivity
k_S	Thermal conductivity of solid phase
k_G	Thermal conductivity of air
k_T	Total thermal conductivity
K_2O	Potassium oxide
l	Length
l_R	Mean free path of radiation energy
M_s	Moment
m_1	Dry weight

m_2	Suspended weight
m_3	Water saturated weight
MgO	Magnesium oxide
Na_2O	Sodium oxide
Ni	Nickel
NO/NO_x	Nitrogen oxides
P_o	Open porosity
P	Porosity
P_2O_5	Phosphorous oxide
Pa.s	Pascal.second
Pe	Peclet number
ppi	Pore per-inch
ppm	Part per-million
SiC	Silicon carbide
SiO_2	Silica/quartz/cristobalite
SnO	Tin oxide
t	Thickness
T	Temperature
SO_3	Sulfur trioxide
TiO_2	Titanium oxide
V_o	Volume of open space
V_c	Volume of the closed space
V_s	Solid volume
vol.%	Volume percentage
wt.%	Weight percentage