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## NOMENCLATURE

subscripts ad	based on air drying
$M_{ad}$	water
$V_{ad}$	volatile
$A_{ad}$	ash
$FC_{ad}$	fixed carbon
$C_{ad}$	carbon
$H_{ad}$	hydrogen
$N_{ad}$	nitrogen
$O_{ad}$	oxygen
$S_{ad}$	sulfur
$Q_{net,ad}$	calorific value
$FZ$	ignition index
$ZM$	combustion characteristic index
$\rho$	flow density
$t$	time
$x_j$	$j$ -dimensional coordinate
$u_{g,j}$	velocity vector
$\tau_{ji}$	surface component of fluid force at the $i$ -th direction
$f_i$	fluid volume force at the $i$ -th direction
$H$	total heat enthalpy of the fluid
$u_i$	velocity vector at the $i$ -th direction
$\Gamma_h$	heat transfer coefficient
$\rho$	fluid pressure
$S_h$	heat source and radiation heat transfer inside the fluid
$\Gamma_i$	mass transfer coefficient of component $i$
$Y_i$	mass fraction of component $i$
$R_i$	generation rate or consumption rate of component $i$
$S_i$	item of sources
$C_{w,s}$	vapor densities in the solid-phase surface layer
$C_{w,g}$	vapor densities in the gas phase
$k$	speed coefficient
$T_s$	pellet temperature
$Y_{vol}$	instant mass fraction of volatiles
$D_g$	diffusion coefficient of volatile gas
$\varepsilon$	pellet porosity
$C$	matter concentration
$\Omega$	reaction equivalent coefficient
subscripts	fuels
<i>fuel</i>	
subscripts ox	oxidizer
$R_{lam}$	laminar flow reaction rate
$C_j$	concentration of material $j$
$\eta_j$	concentration index
$\beta$	temperature index
$A$	pre-exponential factor
$E$	activation energy
$k$	reaction rate constant
$R$	general gas constant
$Sc$	Schmidt number
$Re$	Reynolds number