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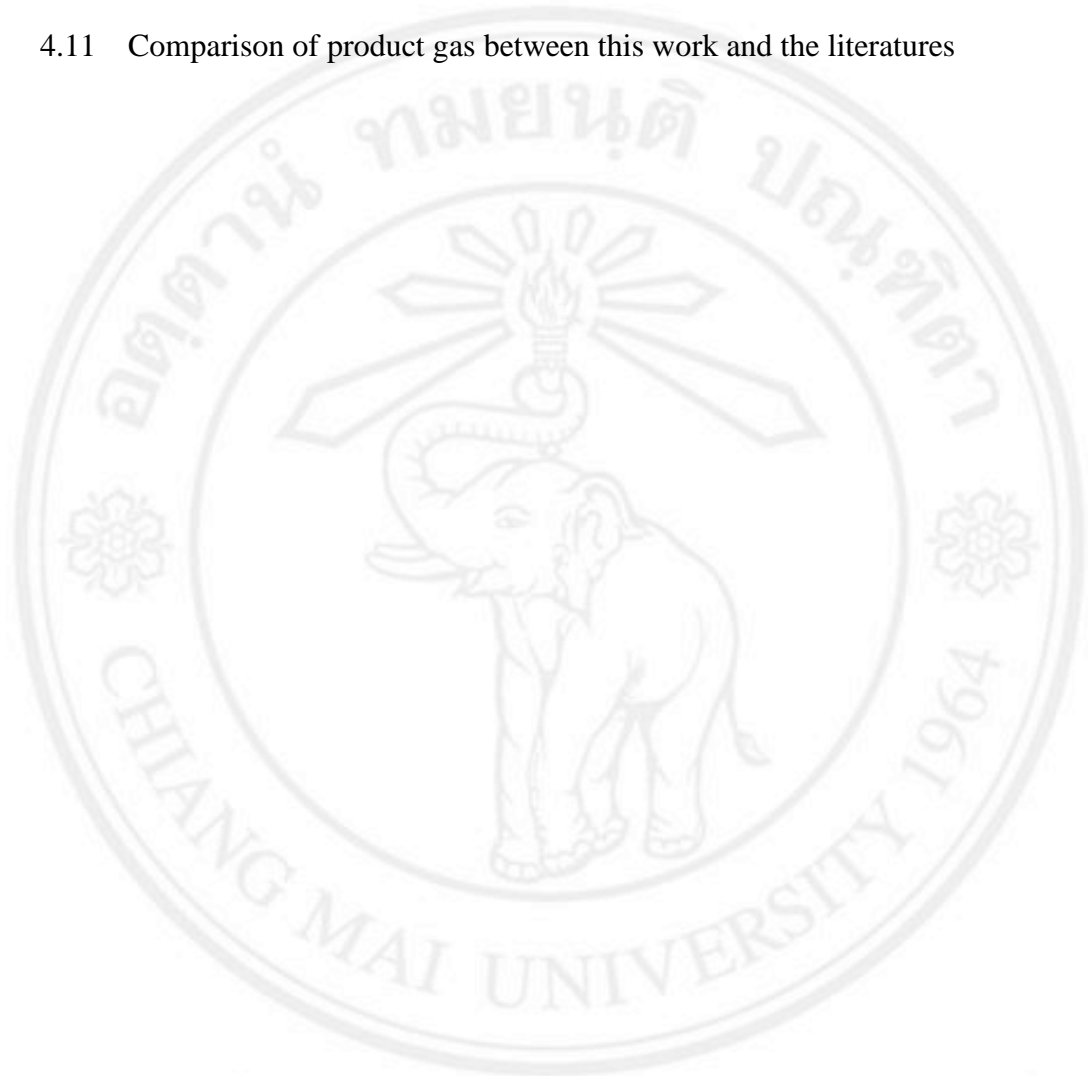
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ABBREVIATION AND SYMBOLS

Symbol	Meaning	Unit
2D	Two dimensional geometry	-
AC	Alternating current	-
AEDP	Alternative energy development plan	-
ASTM	American society for testing and materials	-
CFB	Circulating fluidized bed	-
DC	Direct current	-
DSC	Differential scanning calorimeter	-
FDTD	Finite difference time domain based	-
FT-IR	Fourier transform Infrared spectrometer	-
GC	Gas Chromatography	-
GHG	Green house gas	-
ICTAC	International confederation for thermal analysis and Calorimetry	-
MIP	Microwave induced plasma	-
MS	Mass spectrometer	-
MWP	Microwave plasma	-
RE	Renewable energy	-
RF	Radio frequency	-
RMSE	Root mean square error	-
TE	Transverse electric	-

TGA	Thermogravimetric analysis	-
TM	Transverse magnetic	-
WTE	Waste-to-energy	-
A_f	Ash content in feedstock	% w/w
c	Speed of light in free space (3×10^8)	m/s
C_f	Carbon content in feedstock	% w/w
D_e	Electron diffusivity	m^2/s
D_ε	Electron energy diffusivity	m^2/s
E	Electric field	V/m
\vec{E}	electric field intensity	V/m
f	frequency	Hz
h_f^0	enthalpy of formation of gases	kJ/kmol
H/C	Hydrogen to carbon molar ratio	-
k_0	Free space wave number	-
m_{char}	Mass of obtained char	kg
m_f	Original mass of feedstock	kg
m_{gas}	Mass of gas products	kg
m_{liquid}	Mass of liquid	kg
m_{solid}	Mass of solid	kg
n	Number of electrons	
n	Order of reaction	
n_e	Electron density	$1/\text{m}^3$
n_ε	Electron density	$1/\text{m}^3$
N	Number of data	-

O/C	Oxygen to carbon molar ratio	-
P_{gas}	Pressure of gas products	Pa
P^0	Standard pressure	Pa
Q_{gas}	Volume of product gas generated	Nm ³
Q_{total}	Volume of total gas generated	Nm ³
R	Universal gas constant (8.31446)	J/mol.K
R_ϵ	Energy loss or gain due to inelastic collisions	V/m ³ ·s
R_e	Electron rate expression	1/m ³ ·s
t	Time	s
T	Temperature	K
T_e	Electron temperature	eV
ν_i	Stoichiometric number of gases species i involving reaction	-
V_{gas}	Gas volume	l
W_f	Mass of final residual	kg
W_i	Initial mass of the raw material	kg
W_t	Mass of oxidized material	kg
x_i	Mole fraction of species i in the ideal gas mixture	mol
x_i	Value from model prediction	mol
Y_{char}	Char yield	%
Y_{gas}	Gas yield	Nm ³ /kg

Greek letters		Unit
ε'	relative permittivity or dielectric constant of a material	-
ε''	relative dielectric loss of a material	-
$\bar{\varepsilon}$	mean electron energy	eV
ε_0	free space permittivity (8.854×10^{-12})	F/m
ε_r	relative permittivity	-
ε	electrical permittivity	-
ε_0	permittivity of vacuum	-
μ	the magnetic permeability	-
μ'	relative permeability of a material	-
μ_e	electron mobility which is either a scalar or tensor	$\text{m}^2/\text{V}\cdot\text{s}$
μ_r	relative permeability	-
μ_ε	electron mobility which is either a scalar or tensor	$\text{m}^2/\text{V}\cdot\text{s}$
η_c	carbon conversion efficiency	%
$\Delta g_{f,T,i}^0$	standard Gibbs function of formation at given temperature T of the gas species i	kJ/kmol
ΔG_T^0	standard Gibbs function of reaction at given temperature T	kJ/kmol
α	conversion	-
σ	electrical conductivity of a material	s/m
ω	angular wave frequency	rad/s