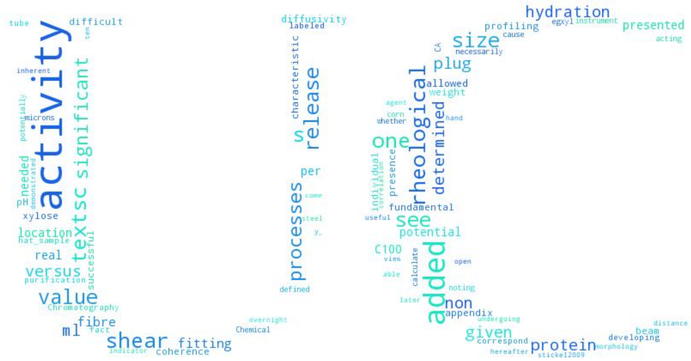

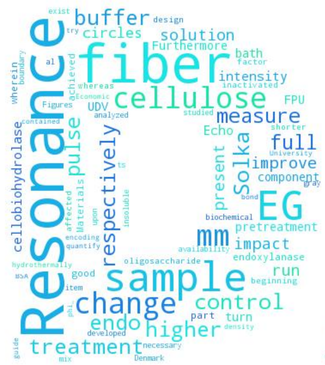
Resonance
fiber
cellulose
buffer
circles
solution
Furthermore
measure
Solka
EG
full
mm
sample
change
control
higher
endo
treatment
respectively
pulse
present
impact
improve
run
pretreatment
endoxylanase
oligosaccharide
cellobiohydrolase
bath
intensity
inactivated
FPU
Echo
UDV
analyzed
Figures
Materials
contained
achieved
whereas
Economic
Denmark
Danish
Technical
University
Department
Chemical
Biochemical
Engineering
Sigma
Aldrich
Copenhagen
Kongens
Lyngby
Denmark
Phone
+45
4525
2800
Fax
+45
4588
3136
Email
kim@kt.dtu.dk
Abstract
Lignocellulosic
biomass
is
a
promising
renewable
resource
for
production
of
biofuels
and
biochemicals
Pretreatment
is
a
necessary
step
to
make
the
cellulose
in
lignocellulosic
biomass
accessible
to
enzymes
Pretreatment
of
lignocellulosic
biomass
results
in
a
complex
mixture
of
cellulose
hemicellulose
and
lignin
Pretreatment
also
affects
the
properties
of
the
cellulose
in
the
pretreated
biomass
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as
the
degree
of
polymerization
and
the
specific
surface
area
Cellulose
is
the
substrate
for
cellulases
and
the
properties
of
the
cellulose
affect
the
enzymatic
hydrolysis
of
the
pretreated
biomass
Cellulose
is
a
linear
polymer
of
glucose
units
connected
by
beta
glucosidic
bonds
Cellulose
can
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amorphous
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or
in
a
crystalline
state
Cellulose
can
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be
in
different
crystalline
polymorphs
Cellulose
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of
cellulose
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II
cellulose
III
and
cellulose
IV
Cellulose
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is
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most
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form
of
cellulose
in
nature
Cellulose
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polymorphs
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and
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form
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the
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Cellulose
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cellulose
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renewable
resource
for
production
of
biofuels
and
biochemic