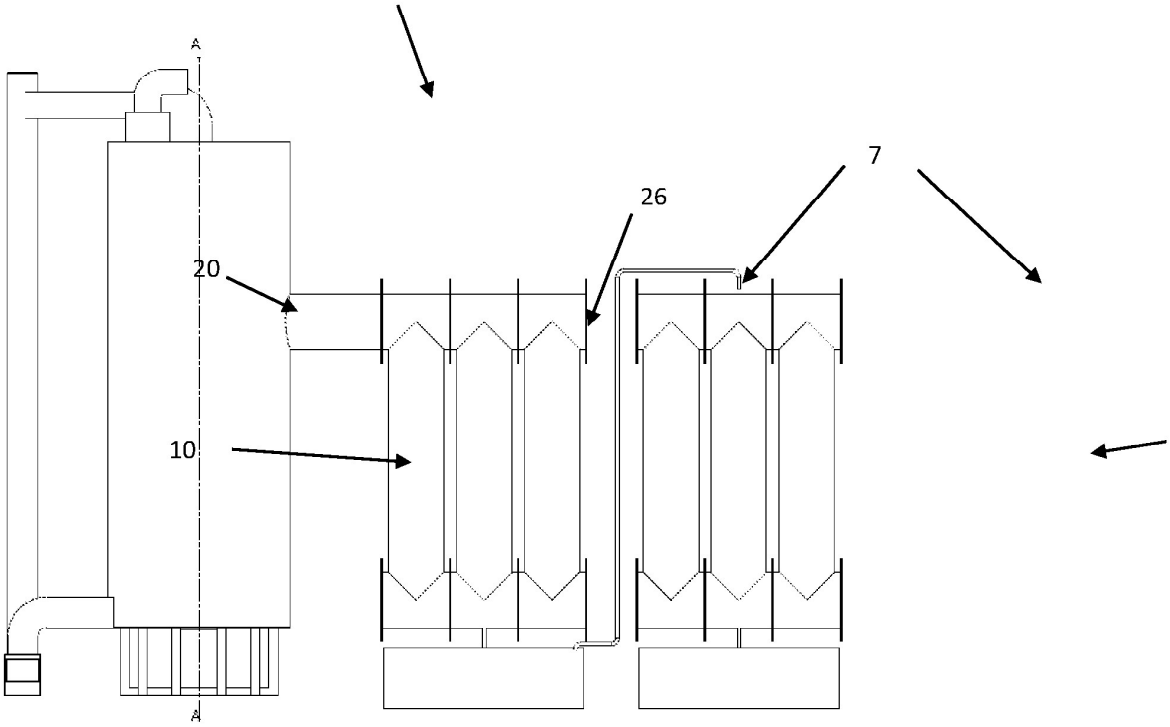


FIGURE 1

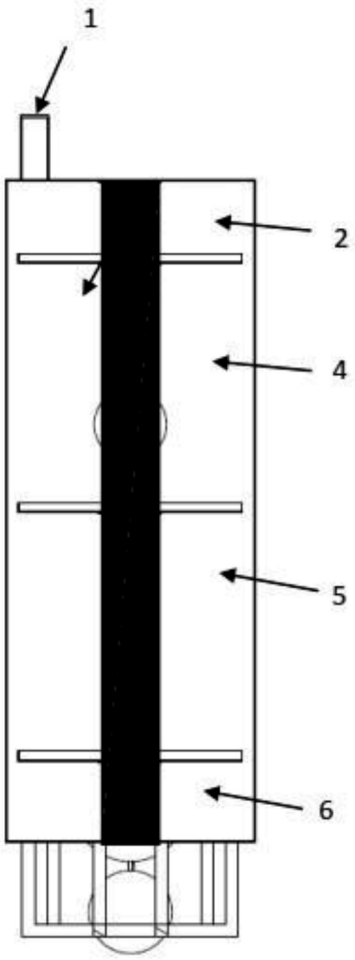


FIGURE 2

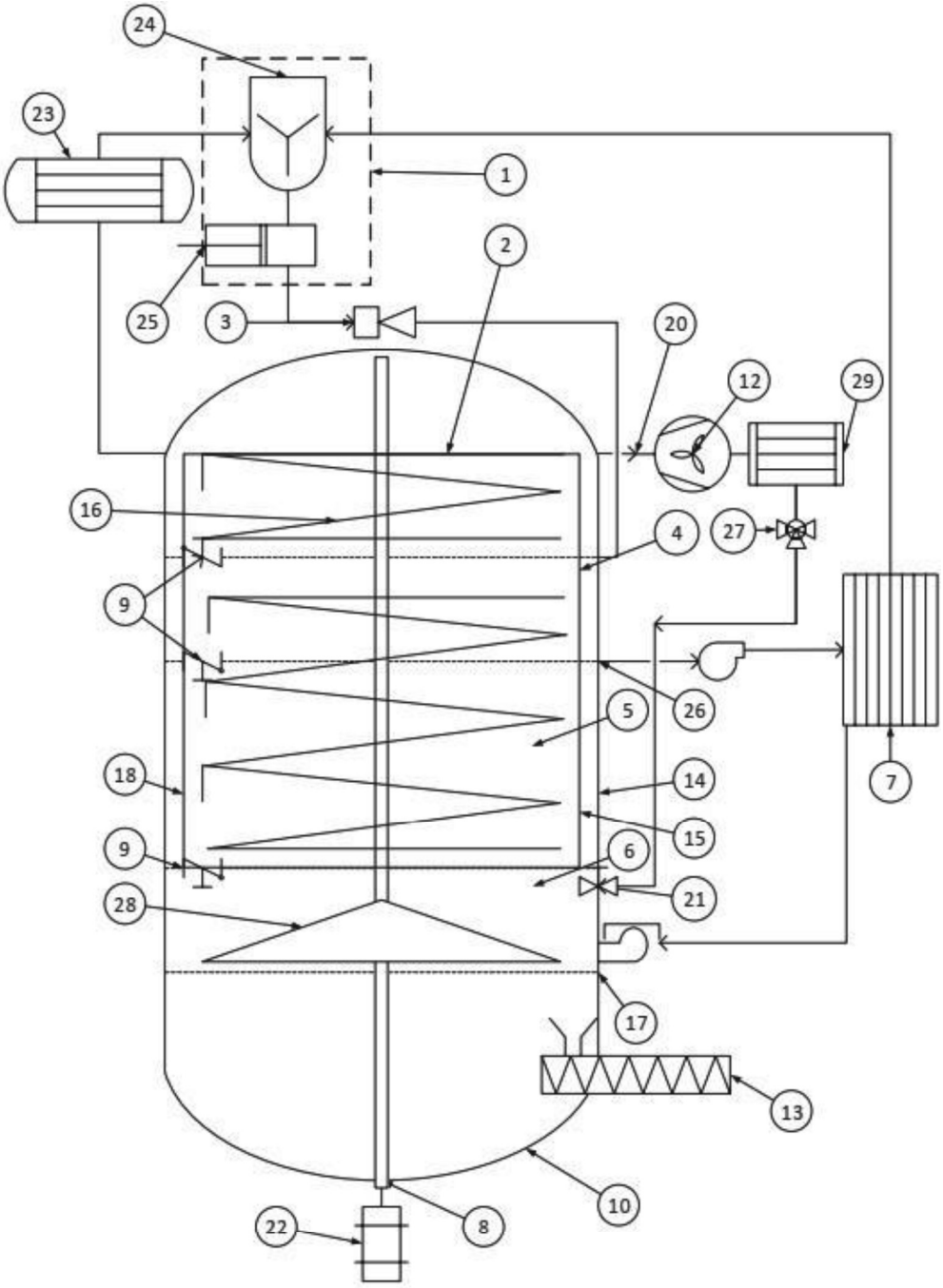


FIGURE 3

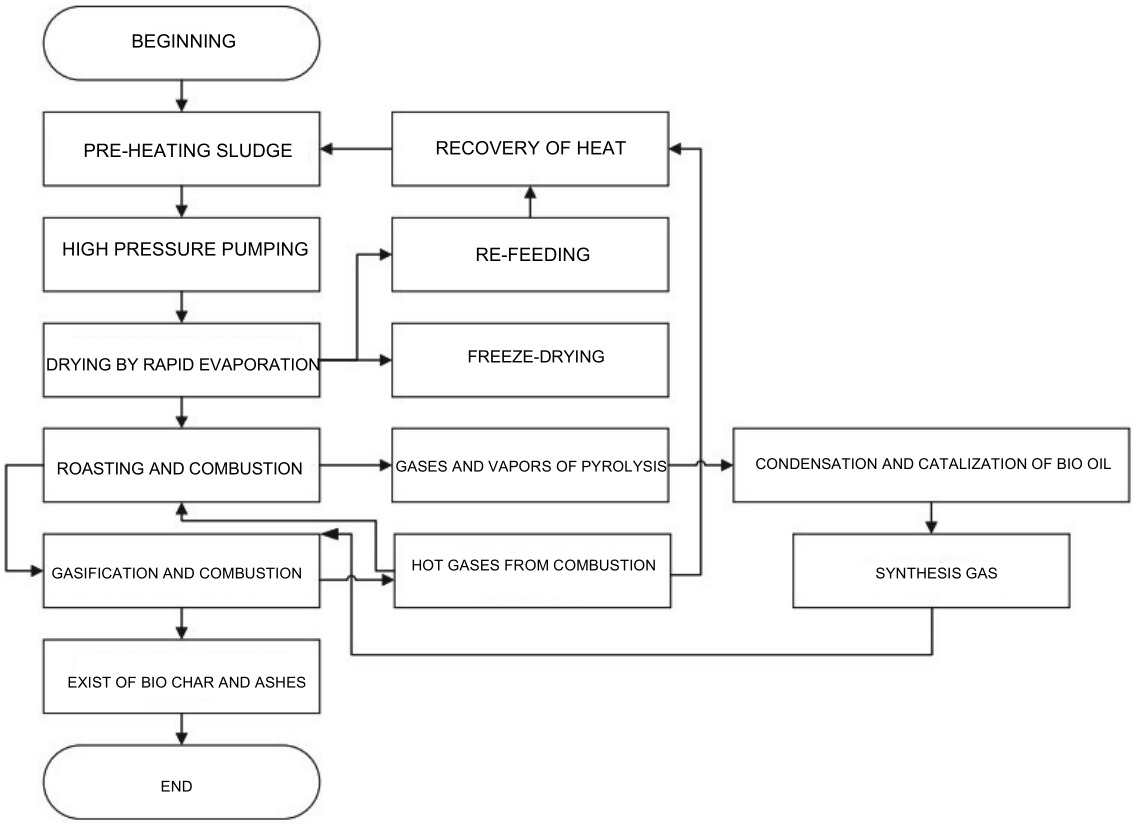

BEGINNING
PRE-HEATING SLUDGE
RECOVERY OF HEAT
HIGH PRESSURE PUMPING
RE-FEEDING
DRYING BY RAPID EVAPORATION
FREEZE-DRYING
ROASTING AND COMBUSTION
GASES AND VAPORS OF PYROLYSIS
CONDENSATION AND CATALIZATION OF BIO OIL
GASIFICATION AND COMBUSTION
HOT GASES FROM COMBUSTION
SYNTHESIS GAS
EXIST OF BIO CHAR AND ASHES
END

FIGURE 4

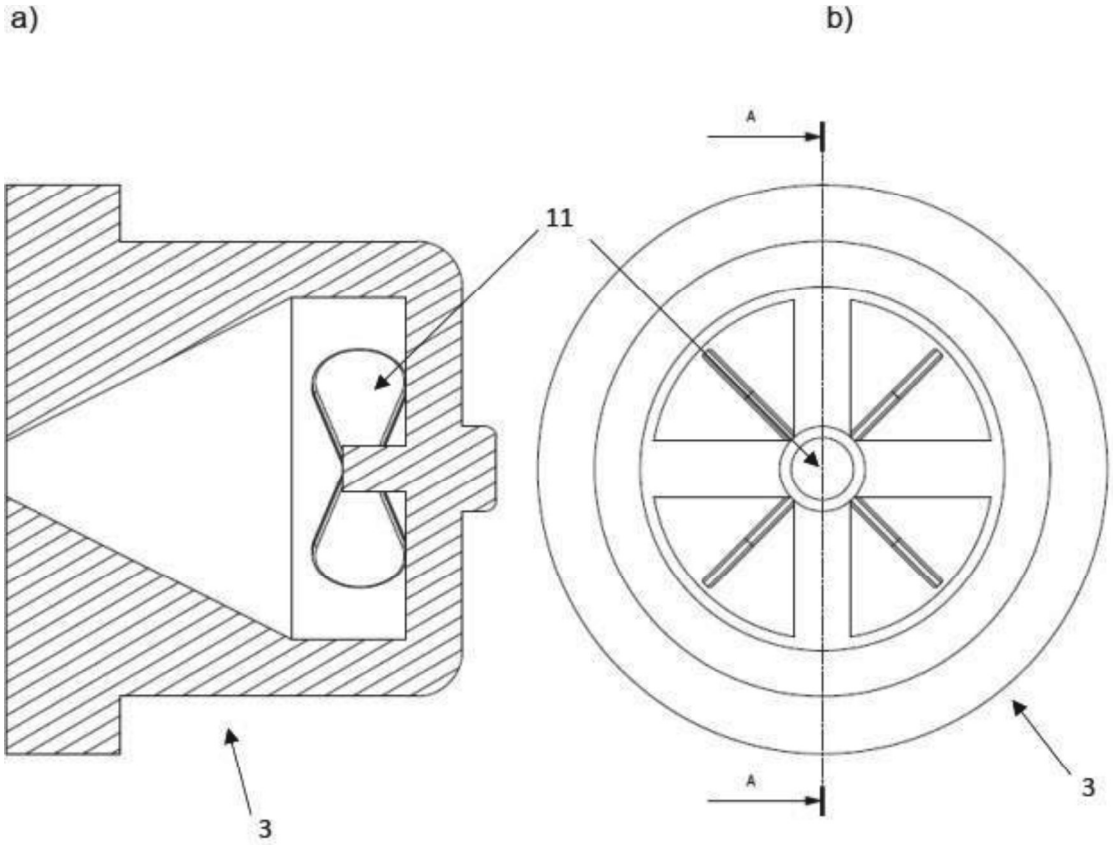


FIGURE 5

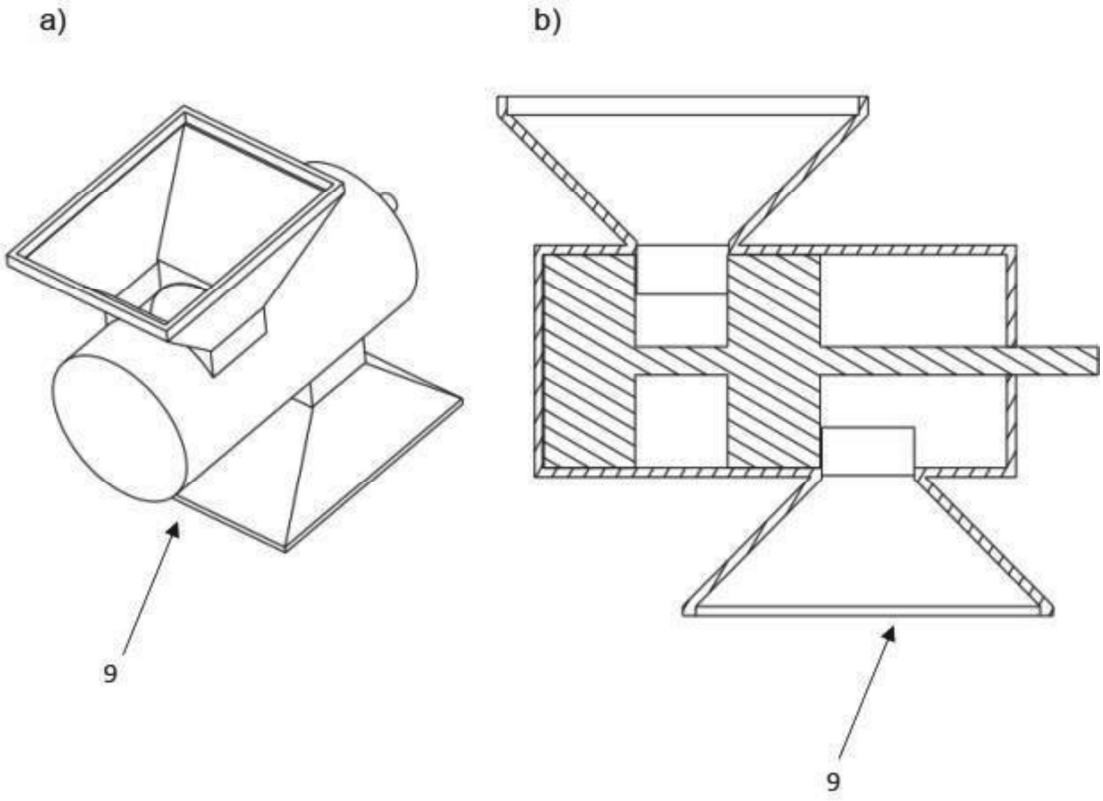


FIGURE 6

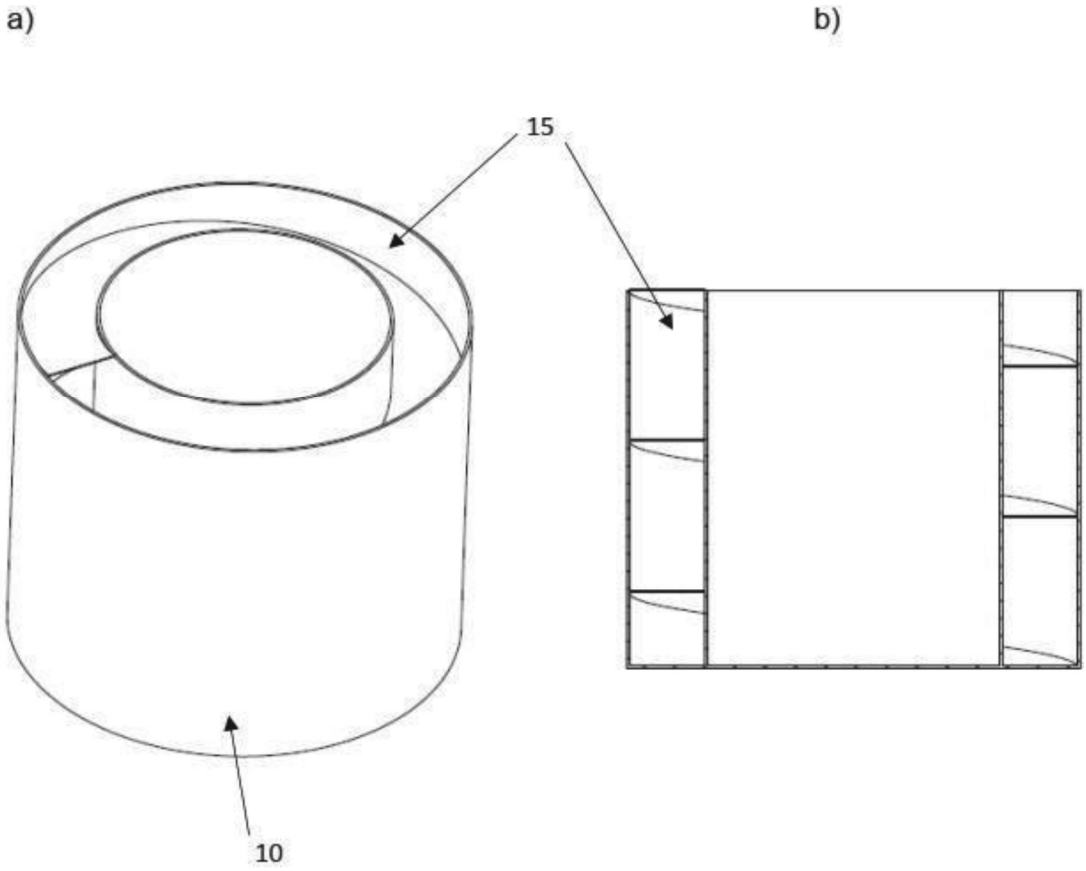


FIGURE 7

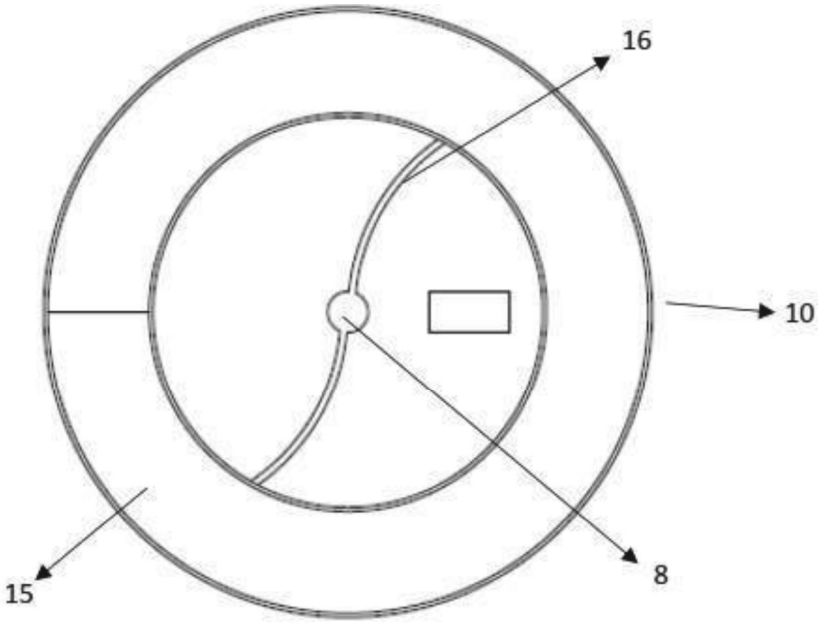


FIGURE 8

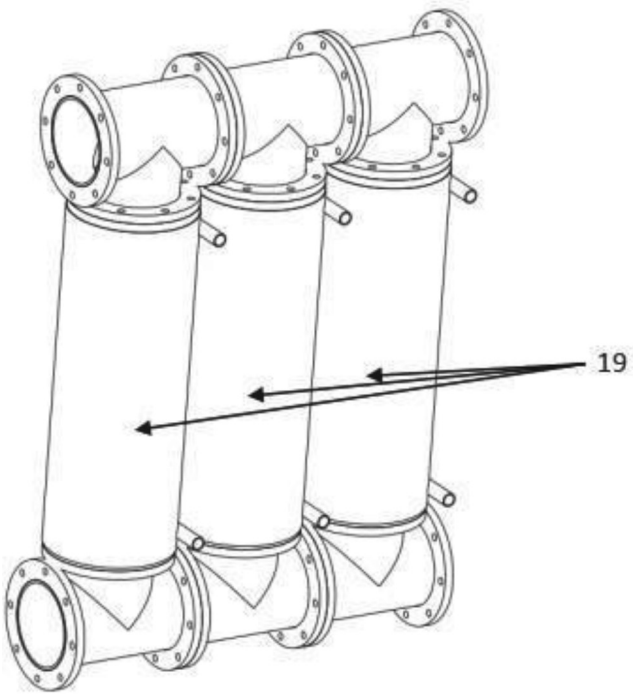


FIGURE 9

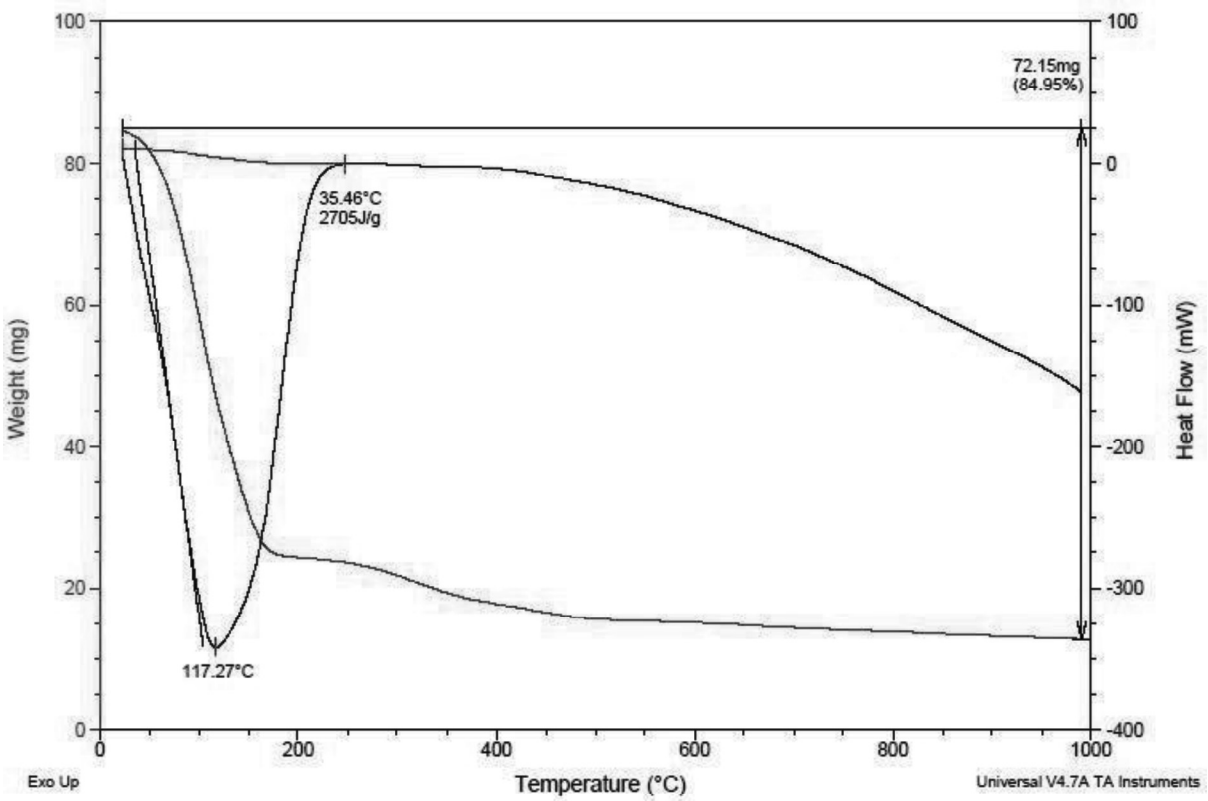

100
80
60
40
20
0
Weight (mg)
100
0
-100
-200
-300
-400
Heat Flow (mW)
72.15mg
(84.95%)
35.46°C
2705J/g
117.27°C
0
200
400
600
800
1000
Temperature (°C)
Exo Up
Universal V4.7A TA Instruments

FIGURE 10