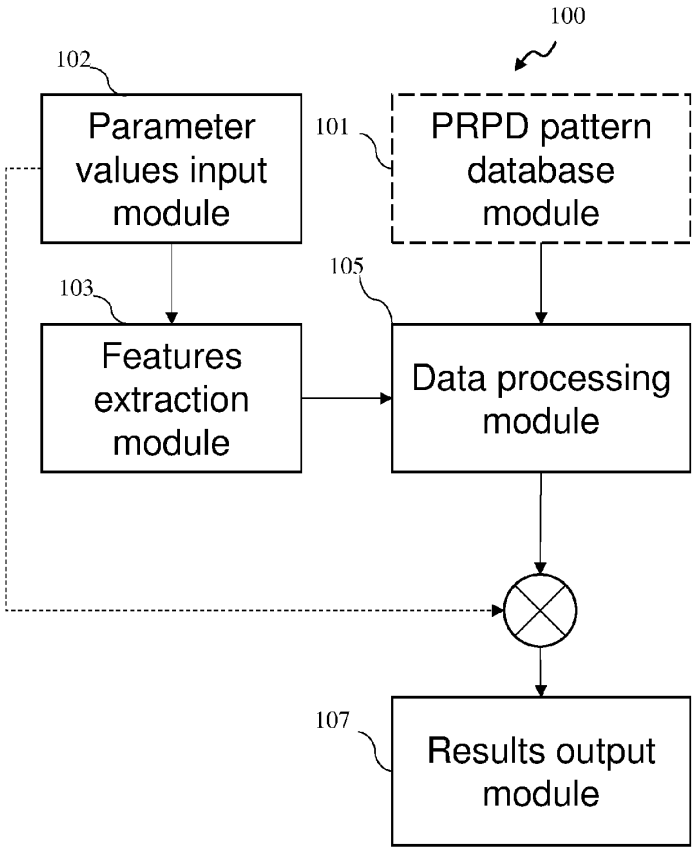

100
102
Parameter values input module
101
PRPD pattern database module
103
105
Features extraction module
Data processing module
107
Results output module

FIG. 1

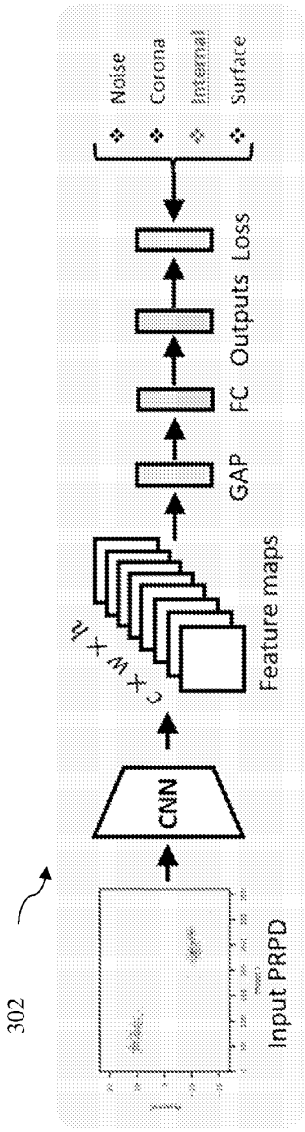

302
Input PRPD
CNN
C x W x H
Feature maps
GAP
FC
Outputs
Loss
Noise
Corona
Internal
Surface

FIG. 2A

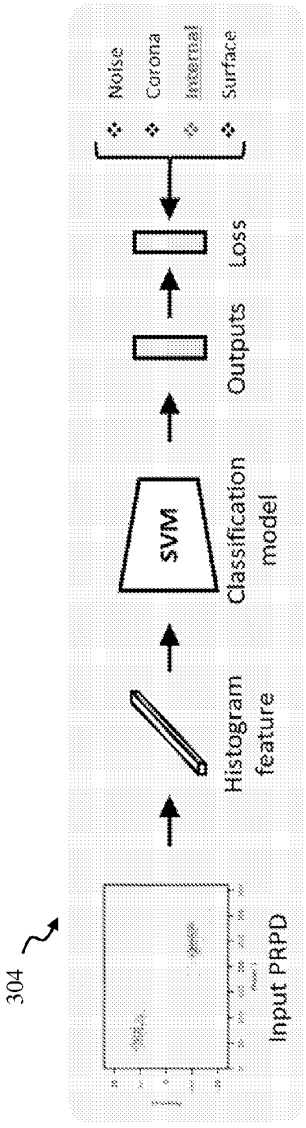

304
Input PRPD
Histogram feature
SVM
Classification model
Outputs
Loss
Noise
Corona
Internal
Surface

FIG. 2B

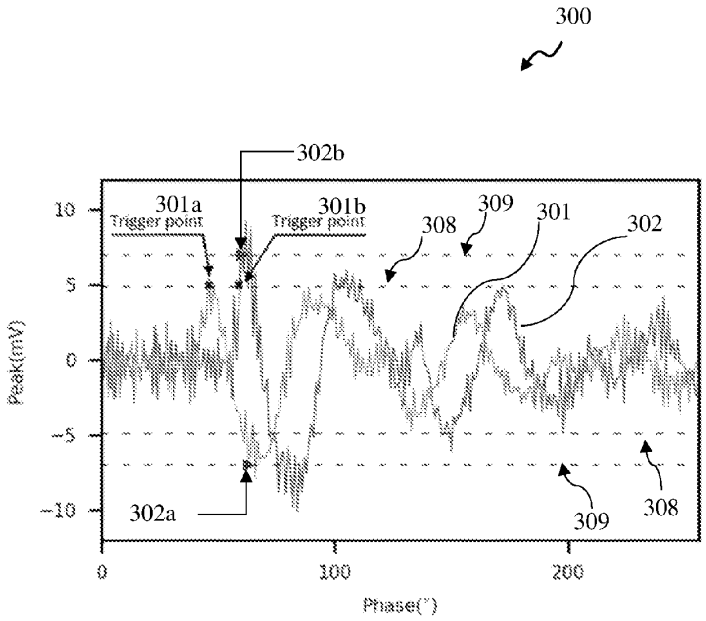

300
302b
301a
Trigger point
301b
Trigger point
309
301
308
302
10
5
0
−5
−10
Peak(mV)
302a
309
308
0
100
200
Phase(°)

FIG. 3

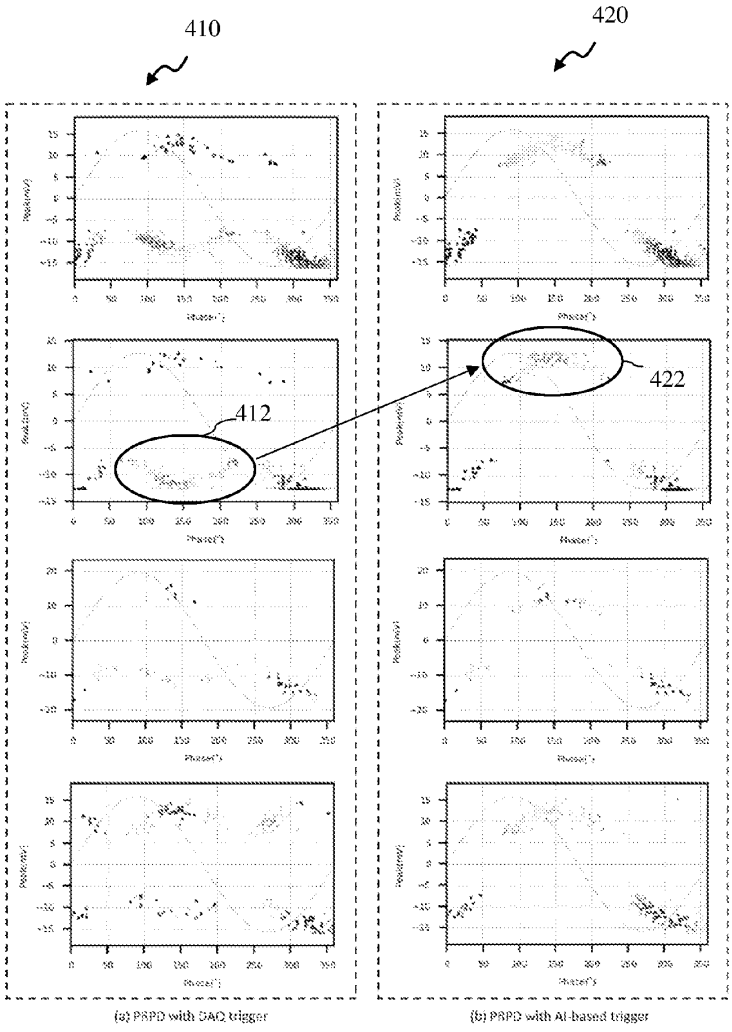

410
420
412
422
(a) PRPD with DAQ trigger
(b) PRPD with AI-based trigger

FIG. 4A FIG. 4B

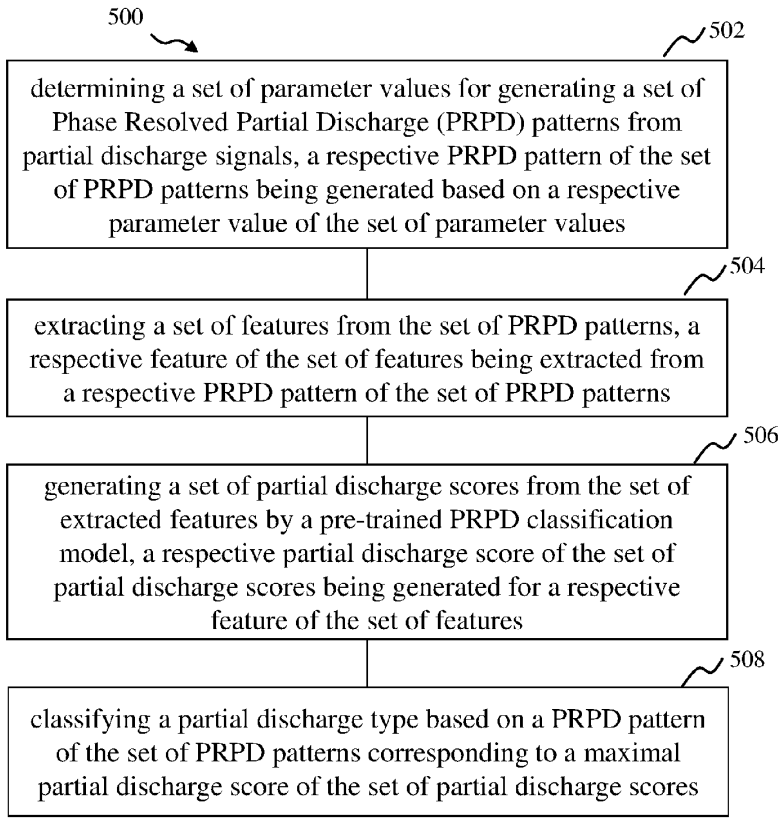

500
502
determining a set of parameter values for generating a set of Phase Resolved Partial Discharge (PRPD) patterns from partial discharge signals, a respective PRPD pattern of the set of PRPD patterns being generated based on a respective parameter value of the set of parameter values
504
extracting a set of features from the set of PRPD patterns, a respective feature of the set of features being extracted from a respective PRPD pattern of the set of PRPD patterns
506
generating a set of partial discharge scores from the set of extracted features by a pre-trained PRPD classification model, a respective partial discharge score of the set of partial discharge scores being generated for a respective feature of the set of features
508
classifying a partial discharge type based on a PRPD pattern of the set of PRPD patterns corresponding to a maximal partial discharge score of the set of partial discharge scores

FIG. 5

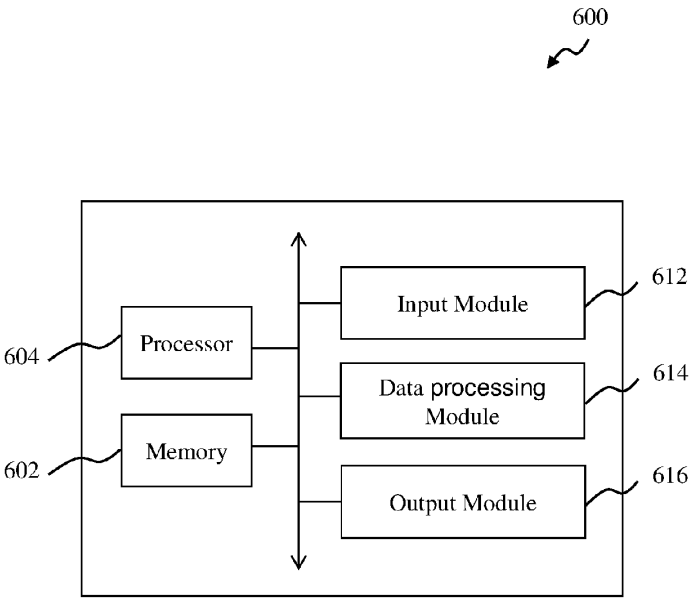

600
Processor
604
Memory
602
Input Module
612
Data processing Module
614
Output Module
616

FIG. 6