Supplementary file

Table S1. The tuned coefficients and intercept values were obtained from the linear regression model.

Input feature	Temperature	Pressure	Stand-off distance	Gas	Type of powder
Coefficients	–0.73	–0.16	0.39	–3.39	2.18
Intercept			2.42		

Table S2. The tuned hyperparameter values for the decision trees model.

criterion	max_depth	min_sample_split	splitter
Poisson	20	2	random

Table S3. The tuned hyperparameter values for the random forests model.

n_estimators	criterion	max_depth	min_samples_split	min_samples_leaf	max_features
300	Poisson	40	2	1	None

Table S4. The tuned hyperparameter values for the GBOOST model.

learning rate	max_depth	max_features	min_samples_split	min_samples_leaf	n_estimators
0.5	5	sqrt	2	1	300

Table S5. The tuned hyperparameter values for the XGBOOST model.

Alpha	eta	lambda	max depth	n_estimators	subsample
0	0.1	1	10	300	1

Table S6. The tuned hyperparameter values for the SVR_lin model.

gamma	epsilon	C
1	0.6	1

Table S7. The tuned hyperparameter values for the SVR_poly model.

gamma	epsilon	C
1	1	0.5

Table S8. The tuned hyperparameter values for the SVR_rbf model.

gamma	epsilon	C
1	0.3	0.5

Table S9. The tuned hyperparameter values for the ANN model.

Number of hidden layers	2
Number of neurons in hidden layer 1	15
Number of neurons in hidden layer 2	6
Activation function for hidden layer 1	relu
Activation function for hidden layer 2	relu
Activation function for the output layer	sigmoid
Optimiser	adam
Loss function	mean squared error