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LIST OF SYMBOLS ABBREVIATIONS

Symbols

R² - Coefficient of determination
R - Correlation coefficient
η - Learning rate
μm - micron
β - Momentum coefficient
n - Number of observations
y - Observed data
ς - Sigmoidal gain
α - Threshold value
F - Thrust

Abbreviations

Al - Aluminium
AMCs - Aluminium Matrix Composites
Al₂O₃ - Aluminium Oxide (alumina)
ASTM - American Society for Testing and Materials
ANOVA - Analysis of Variance
ACM - Applied Corrosion Monitoring
ANN - Artificial Neural Network
BP - Back Propagation
CaO - Calcium Oxide
Cl - Cholrine
CNC - Computer Numerical Control
Cu - Copper
DOE - Design of Experiments
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<tr>
<td>EDM</td>
<td>Electric Discharge Machining</td>
</tr>
<tr>
<td>ECM</td>
<td>Electro Chemical Machining</td>
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<tr>
<td>Fe₂O₃</td>
<td>Ferrous Oxide</td>
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<td>GRNN</td>
<td>Generalized Regression Neural Network</td>
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<tr>
<td>Gr</td>
<td>Graphite</td>
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<tr>
<td>HERF</td>
<td>High Energy High Rate Forming</td>
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<td>HSS</td>
<td>High Speed Steel</td>
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<td>I₀D/C₁D Ratio</td>
<td>Impeller outer dia/ Crucible inner dia ratio</td>
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<td>LVDT</td>
<td>Linear Variable Differential Transducer</td>
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<tr>
<td>Mg</td>
<td>Magnesium</td>
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<tr>
<td>MgO</td>
<td>Magnesium Oxide (Magnesia)</td>
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<td>MEP</td>
<td>Mean Error Percentage</td>
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<tr>
<td>MSE</td>
<td>Mean Square Error</td>
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<tr>
<td>MML</td>
<td>Mechanical Mixed Layer</td>
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<tr>
<td>MPa</td>
<td>Mega Pascal</td>
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<td>MMCs</td>
<td>Metal Matrix Composites</td>
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<tr>
<td>MLP</td>
<td>Multi Layer Perceptron</td>
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<tr>
<td>OCP</td>
<td>Open Circuit Potential</td>
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<tr>
<td>PCD</td>
<td>Polycrystalline Diamond</td>
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<tr>
<td>pH</td>
<td>Hydrogen potential</td>
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<tr>
<td>RBF</td>
<td>Radial Basis Function</td>
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<tr>
<td>RSM</td>
<td>Response Surface Method Network</td>
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<tr>
<td>RMSE</td>
<td>Root Mean Square Error</td>
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<tr>
<td>SEM</td>
<td>Scanning Electron Microscope</td>
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<td>S/N Ratio</td>
<td>Signal to Noise Ratio</td>
</tr>
<tr>
<td>SiC</td>
<td>Silicon Carbide</td>
</tr>
<tr>
<td>SiO₂</td>
<td>Silicon di oxide</td>
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<tr>
<td>NaCl</td>
<td>Sodium Chloride</td>
</tr>
<tr>
<td>SCE</td>
<td>Standard Reference Electrode</td>
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<td>Description</td>
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<tr>
<td>Ti</td>
<td>Titanium</td>
</tr>
<tr>
<td>TiAlN</td>
<td>Titanium Aluminium Nitride</td>
</tr>
<tr>
<td>TiB₂</td>
<td>Titanium Boride</td>
</tr>
<tr>
<td>TiN</td>
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<tr>
<td>UTM</td>
<td>Universal Testing Machine</td>
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<tr>
<td>Wt</td>
<td>Weight</td>
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