**Table 5.** Comparison of predicted values with simulated results under different conditions.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Temperature (℃) | Pipe diameter (mm) | Pipe length (mm) | Inlet concentration (mol/m3) | Flow velocity (m/s) | Outlet concentration (mol/m3) | |
| Predicted | Simulated |
| 117 | 50 | 957 | 0.02 | 3.62 | 0.01030 | 0.01031 |
| 143 | 50 | 1563 | 0.02 | 4.46 | 0.00240 | 0.00230 |
| 126 | 50 | 2456 | 0.02 | 3.45 | 0.00120 | 0.00124 |
| 133 | 50 | 2856 | 0.02 | 4.56 | 0.00083 | 0.00088 |
| 113 | 50 | 945 | 0.04 | 3.34 | 0.02250 | 0.02262 |
| 136 | 50 | 1459 | 0.04 | 4.66 | 0.01010 | 0.01012 |
| 128 | 50 | 2374 | 0.04 | 3.58 | 0.00330 | 0.00334 |
| 142 | 50 | 2785 | 0.04 | 4.74 | 0.00100 | 0.00110 |
| 113 | 80 | 867 | 0.02 | 3.23 | 0.01090 | 0.01109 |
| 132 | 80 | 1326 | 0.02 | 4.26 | 0.00530 | 0.00530 |
| 129 | 80 | 2572 | 0.02 | 3.45 | 0.00070 | 0.00073 |
| 137 | 80 | 2772 | 0.02 | 4.28 | 0.00047 | 0.00046 |
| 118 | 80 | 1075 | 0.04 | 4.52 | 0.02270 | 0.02266 |
| 140 | 80 | 1567 | 0.04 | 3.72 | 0.00440 | 0.00436 |
| 131 | 80 | 2549 | 0.04 | 4.69 | 0.00410 | 0.00448 |
| 133 | 80 | 2866 | 0.04 | 4.25 | 0.00190 | 0.00189 |