**Table 8.** Optimized parameters and corresponding costs for a pipe diameter of 50 mm

(Pipe length range: 800 to 3000 mm).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pipe Diameter  (mm) | Inlet concentration (mol/m3) | Optimization objective | Optimization results | | | | | |
| Length (mm) | Temperature (°C) | Velocity (m/s) | *P*  (CNY/h) | | *P'* (CNY/kg) |
|
| 50 | 0.02 | Minimizing *P* | 975.56 | 149.9949 | 3 | 5.6758 | - | |
| Minimizing *P'* | 1386.17 | 149.9592 | 4.3625 | - | 0.2029 | |
| 0.04 | Minimizing *P* | 1303.59 | 149.9793 | 3 | 7.3114 | - | |
| Minimizing *P'* | 1485.15 | 150 | 3.5120 | - | 0.2603 | |