Figure 1S. The change of pH in the solutions with reaction time. The reaction was carried out at 70 °C.
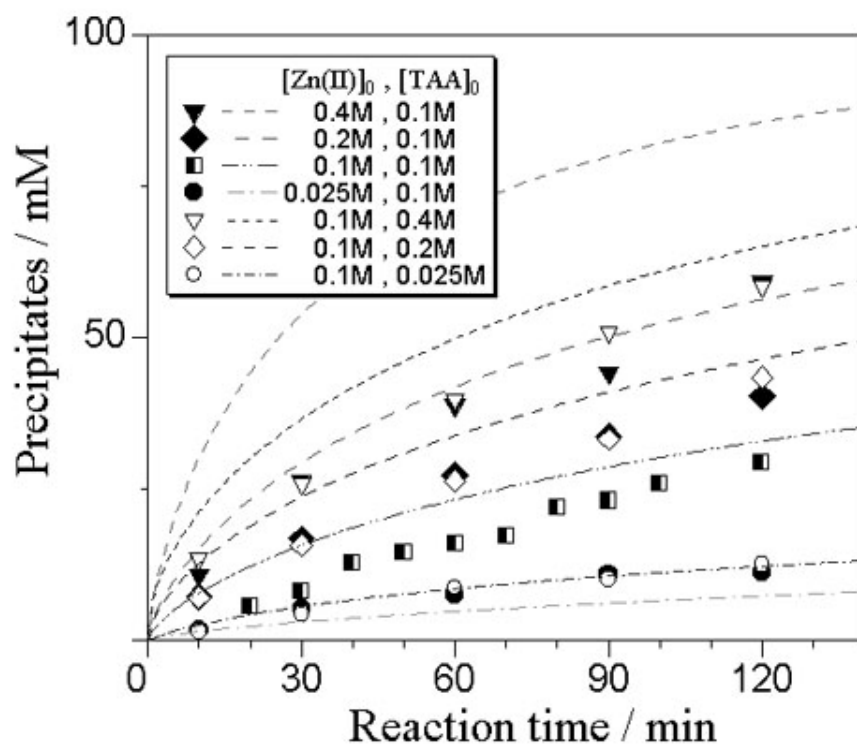
Figure 2S. Comparison of the amounts of ZnS precipitates ($P_t$) plotted versus reaction time (same as shown in Figure 2) to the theoretically calculated curves obtained by applying eq. A8 (see text in Appendix (ii) for detail).

**Table 1S**

Table 1S. Rate constants for ZnS precipitation determined for eq. 1, by fitting eq. 2 with the experimental data at various reaction temperatures. (See Appendix for detail)

| Temperature / °C | $10^3 \times k$ / $(\text{mol } l^{-1})^{1-2n} \text{ min}^{-1}$ |
|:---:|:---:|
| 50 | 2.01 |
| 60 | 3.52 |
| 70 | 5.66 |
| 80 | 10.03 |
| 90 | 18.14 |