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APPENDICES

APPENDIX A
SAMPLE OF CALCULATION

Percentage of *E. coli* killed was calculated by following :

$$\% E. coli \text{ killed} = \frac{(\text{Initial count} - \text{Final count})(100)}{\text{Initial count}}$$

For 75 % *E. coli* killed on 5.79% Ag loading at 24 seconds

$$\begin{aligned} \% E. coli \text{ killed} &= \frac{(4000-1000)(100)}{4000} \\ &= 75 \end{aligned}$$

Contact time was calculated by void volume divided by flow rate used.

For alumina balls;

The average void volume of alumina balls is 35 ml.

For flowrate at 200 ml/min

$$\begin{aligned} \text{Contact time} &= \frac{(35)(60)}{200} \\ &= 10.5 \text{ s} \end{aligned}$$

APPENDIX B
EXPERIMENTAL DATA

Table B.1 Experimental data of single-pass killing study on alumina balls at dissolved oxygen = 7.9 mg/l

Silver loading	Flowrate (ml/min)	Average number of <i>E. coli</i> (N/100 ml)	
		Inlet	Outlet
Blank	100	10700	10700
	200	12600	12500
	300	11900	11900
0.73%	100	8600	5700
	200	9600	7100
	300	8900	7100
2.48%	100	8600	5500
	200	8900	6500
	300	8500	6600
2.77%	100	8800	5400
	200	8700	6300
	300	9400	7100
6.45%	100	8500	4100
	200	8400	4700
	300	8000	5000
	400	8000	6000

Table B.2 Experimental data of single-pass killing study on alumina powder at dissolved oxygen = 7.9 mg/l

Silver loading	Flowrate (ml/min)	Average number of <i>E. coli</i> (N/100 ml)	
		Inlet	Outlet
Blank	20	4600	4200
	50	4800	4600
	100	5100	4900
	150	5200	5200
5.97%	20	4000	1000
	50	4400	2000
	100	4000	2700
	150	3800	3100
9.87%	20	5400	500
	50	5200	1200
	100	4900	3000
	150	4000	3000
14.89%	20	4300	300
	50	5000	1000
	100	5200	2900
	150	4200	2900

Table B.3 Experimental data of single-pass killing study on alumina powder with 9.87% silver loading

Dissolved oxygen (mg/l)	Flowrate (ml/min)	Average number of <i>E. coli</i> (N/100 ml)	
		Inlet	Outlet
1.5	20	6200	5000
	50	5700	4800
	100	7000	6500
	150	7200	6500
7.9	20	5400	500
	50	5200	1200
	100	4900	3000
	150	4000	3000
22	20	3900	200
	50	5100	700
	100	5200	2700
	150	5000	3000

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