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APPENDICES

Appendix A Surface Tension of Surfactant Solutions

Table A1 Surface tension of CPC solution

| CPC Concentration (μM) | Surface tension (mN/m) | | |
|-------------------------------------|------------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 5 | 71.00 | 61.10 | 59.50 |
| 10 | 69.200 | 56.07 | 49.67 |
| 20 | 68.400 | 52.73 | 44.10 |
| 30 | 66.000 | 46.60 | 41.00 |
| 50 | 64.227 | 42.80 | 39.20 |
| 70 | 61.900 | 40.18 | 37.52 |
| 100 | 60.238 | 38.80 | 37.86 |
| 150 | 59.597 | 38.16 | 37.65 |
| 200 | 58.956 | 37.53 | 37.44 |
| 300 | 54.654 | 37.48 | 37.29 |
| 500 | 48.617 | 37.38 | 36.54 |
| 700 | 45.978 | 38.24 | 37.16 |
| 900 | 41.502 | 38.27 | 37.07 |
| 1000 | 40.200 | 38.30 | 36.98 |
| 1500 | 40.706 | 38.30 | 36.58 |
| 2000 | 41.212 | 38.30 | 36.19 |

Table A2 Surface tension of NaOBS solution

| NaOBS Concentration (μM) | Surface tension (mN/m) | | |
|---------------------------------------|------------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 100 | 71.69 | 68.47 | 67.60 |
| 300 | 70.90 | 66.11 | 63.21 |
| 500 | 69.13 | 63.84 | 58.95 |
| 600 | 68.41 | 63.11 | 57.83 |
| 800 | 66.35 | 60.70 | 55.99 |
| 1,000 | 65.75 | 59.13 | 53.35 |
| 1,500 | 60.77 | 56.13 | 50.19 |
| 2,000 | 59.14 | 53.94 | 47.80 |
| 3,000 | 56.00 | 50.17 | 42.51 |
| 4,000 | 52.87 | 46.11 | 40.87 |
| 5,000 | 51.73 | 45.56 | 38.11 |
| 7,000 | 47.05 | 40.28 | 39.23 |
| 10,000 | 42.46 | 40.41 | 38.95 |
| 15,000 | 42.36 | 40.38 | 39.03 |
| 20,000 | 42.07 | 40.35 | 39.10 |

Table A3 Surface tension of OPEO₁₀ solution

| OPEO ₁₀ Concentration (μM) | Surface tension (mN/m) |
|--|------------------------|
| 10 | 53.19 |
| 20 | 49.37 |
| 30 | 47.26 |
| 40 | 44.60 |
| 50 | 43.30 |
| 60 | 42.34 |
| 70 | 41.06 |
| 80 | 40.06 |
| 100 | 38.47 |
| 150 | 35.87 |
| 200 | 33.27 |
| 300 | 31.15 |
| 400 | 31.32 |
| 500 | 31.40 |
| 600 | 31.49 |
| 800 | 31.61 |
| 1000 | 31.71 |

Appendix B Contact Angle of Surfactant Solutions

Table B1 Contact angle of CPC solution onto PMMA

| CPC Concentration (μM) | Contact angle (deg) | | |
|-------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 10 | 63.88 | 65.55 | 60.08 |
| 20 | 62.30 | 64.52 | 60.80 |
| 30 | 60.64 | 62.8 | 56.72 |
| 50 | 59.02 | 61 | 46.34 |
| 70 | 58.86 | 55.8 | 43.60 |
| 100 | 58.77 | 52 | 37.04 |
| 150 | 56.73 | 46.84 | 37.26 |
| 200 | 56.15 | 42.5 | 38.17 |
| 300 | 53.72 | 37.32 | 38 |
| 500 | 47.09 | 37.00 | 37.5 |
| 700 | 43.61 | 37.00 | 38.5 |
| 900 | 39.30 | 37.00 | 36 |
| 1000 | 36.78 | 37.00 | 37 |
| 1500 | 37.13 | 37.00 | 36 |
| 2000 | 36.50 | 37.00 | 37 |

Table B2 Contact angle of CPC solution onto ABS

| CPC Concentration (μM) | Contact angle (deg) | | |
|-------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 10 | 63.46 | 62.20 | 64.70 |
| 20 | 62.90 | 61.40 | 55.66 |
| 30 | 61.53 | 64.37 | 53.70 |
| 50 | 61.18 | 59.23 | 51.70 |
| 70 | 60.40 | 54.56 | 48.20 |
| 100 | 59.72 | 46.08 | 39.76 |
| 150 | 59.17 | 45.44 | 40.67 |
| 200 | 56.40 | 43.32 | 41.10 |
| 300 | 54.50 | 41.92 | 40.30 |
| 500 | 51.36 | 41.04 | 39.88 |
| 700 | 46.10 | 40.50 | 39.00 |
| 900 | 43.20 | 39.80 | 39.16 |
| 1000 | 39.02 | 40.30 | 38.21 |
| 1500 | 39.00 | 41.10 | 38.50 |
| 2000 | 39.13 | 39.00 | 38.00 |

Table B3 Contact angle of CPC solution onto Nylon6,6

| CPC Concentration (μM) | Contact angle (deg) | | |
|-------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 10 | 62.43 | 60.83 | 63.32 |
| 20 | 62.00 | 57.87 | 60.35 |
| 30 | 61.70 | 55.93 | 57.34 |
| 50 | 59.90 | 54.94 | 51.31 |
| 70 | 59.00 | 51.2 | 44.69 |
| 100 | 58.90 | 44.3 | 42.31 |
| 150 | 58.20 | 43.14 | 37.85 |
| 200 | 55.60 | 40.52 | 37.40 |
| 300 | 52.70 | 38.32 | 35.58 |
| 500 | 46.30 | 37.8 | 35.40 |
| 700 | 42.84 | 38.06 | 35.38 |
| 900 | 39.84 | 37.5 | 35.00 |
| 1000 | 36.97 | 37.3 | 35.00 |
| 1500 | 37.17 | 37.00 | 35.00 |
| 2000 | 37.57 | 36.50 | 35.00 |

Table B4 Contact angle of NaOBS solution onto PMMA

| NaOBS Concentration (μM) | Contact angle (deg) | | |
|---------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 100 | 69.28 | 68.78 | 67.16 |
| 300 | 68.02 | 65.69 | 64.37 |
| 500 | 66.02 | 63.54 | 60.10 |
| 600 | 66.66 | 65.56 | 58.58 |
| 800 | 64.20 | 60.20 | 57.20 |
| 1,000 | 64.26 | 60.82 | 53.80 |
| 1,500 | 62.64 | 57.44 | 50.40 |
| 2,000 | 60.30 | 56.52 | 45.44 |
| 3,000 | 58.00 | 51.10 | 38.80 |
| 4,000 | 56.74 | 44.38 | 32.30 |
| 5,000 | 53.29 | 41.49 | 32.14 |
| 7,000 | 50.25 | 34.11 | 32.50 |
| 10,000 | 38.78 | 34.28 | 32.53 |
| 15,000 | 38.13 | 34.14 | 31.37 |
| 20,000 | 38.34 | 34.33 | 33.03 |

Table B5 Contact angle of NaOBS solution onto ABS

| NaOBS Concentration (μM) | Contact angle (deg) | | |
|---------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 100 | 66.50 | 64.45 | 65.76 |
| 300 | 63.21 | 59.73 | 58.96 |
| 500 | 59.80 | 59.00 | 54.40 |
| 600 | 60.52 | 57.5 | 51.90 |
| 800 | 57.18 | 56.6 | 51.20 |
| 1,000 | 58.09 | 53.02 | 46.54 |
| 1,500 | 54.68 | 48.62 | 44.56 |
| 2,000 | 53.50 | 48.3 | 37.04 |
| 3,000 | 49.63 | 42.2 | 28.82 |
| 4,000 | 46.46 | 36.18 | 20.64 |
| 5,000 | 44.75 | 26.32 | 19.42 |
| 7,000 | 38.60 | 24.58 | 20.48 |
| 10,000 | 28.60 | 23.68 | 20.14 |
| 15,000 | 28.83 | 22.7 | 21.10 |
| 20,000 | 28.20 | 24.36 | 22.80 |

Table B6 Contact angle of NaOBS solution onto Nylon6,6

| NaOBS Concentration (μM) | Contact angle (deg) | | |
|---------------------------------------|---------------------|------------|------------|
| | 0M NaCl | 0.02M NaCl | 0.05M NaCl |
| 100 | 62.26 | 60.44 | 59.64 |
| 300 | 61.32 | 58.58 | 55.77 |
| 500 | 60.07 | 57.06 | 53.58 |
| 600 | 59.59 | 57.04 | 52.63 |
| 800 | 55.68 | 54.36 | 50.87 |
| 1,000 | 58.18 | 53.83 | 47.36 |
| 1,500 | 54.92 | 50.55 | 43.06 |
| 2,000 | 55.14 | 48.32 | 40.40 |
| 3,000 | 51.09 | 43.65 | 29.27 |
| 4,000 | 51.42 | 40.43 | 25.88 |
| 5,000 | 45.71 | 35.67 | 23.60 |
| 7,000 | 43.00 | 24.62 | 20.27 |
| 10,000 | 30.6721 | 24 | 19.76 |
| 15,000 | 30.3 | 24.28 | 21.3 |
| 20,000 | 29.55 | 24.36 | 20.7 |

Table B6 Contact angle of OPEO₁₀ solution onto plastics

| OPEO ₁₀ Concentration (μM) | Contact angle (deg) | | |
|--|---------------------|-------|----------|
| | PMMA | ABS | Nylon6,6 |
| 10 | 62.97 | 61.91 | 67.2 |
| 20 | 61.40 | 57.50 | 60.6 |
| 30 | 60.70 | 54.50 | 57.00 |
| 40 | 56.96 | 53.20 | 55.50 |
| 50 | 56.00 | 50.60 | 54.00 |
| 60 | 53.46 | 48.80 | 52.30 |
| 70 | 52.00 | 45.80 | 49.00 |
| 80 | 48.45 | 41.54 | 46.10 |
| 100 | 42.54 | 40.22 | 47.30 |
| 150 | 38.18 | 33.78 | 40.80 |
| 200 | 28.76 | 25.78 | 30.20 |
| 300 | 24.33 | 19.80 | 23.00 |
| 400 | 20.53 | 18.95 | 21.00 |
| 500 | 20.00 | 17.50 | 21.00 |
| 600 | 20.00 | 17.50 | 21.00 |

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