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Temperature Effects on Threshold Counterion Concentration to Induce Aggregation of fd Virus QI WEN, JAY TANG, Brown University — We seek to determine the mechanism of like-charge attraction by measuring the temperature dependence of critical divalent counterion concentration (C_c) for the aggregation of fd viruses. We find that an increase in temperature leads to a decrease in the dielectric constant (ε) of the solvent, thus causing C_c to decrease. At a constant ε, C_c is found to increase as temperature increases. The effect of T and ε on C_c is combined to that of one parameter: Bjerrum length (l_B). C_c decreases exponentially as l_B increases. The exponential decay of C_c suggests that entropic effect of counterions plays an important role at the onset of bundle formation.

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