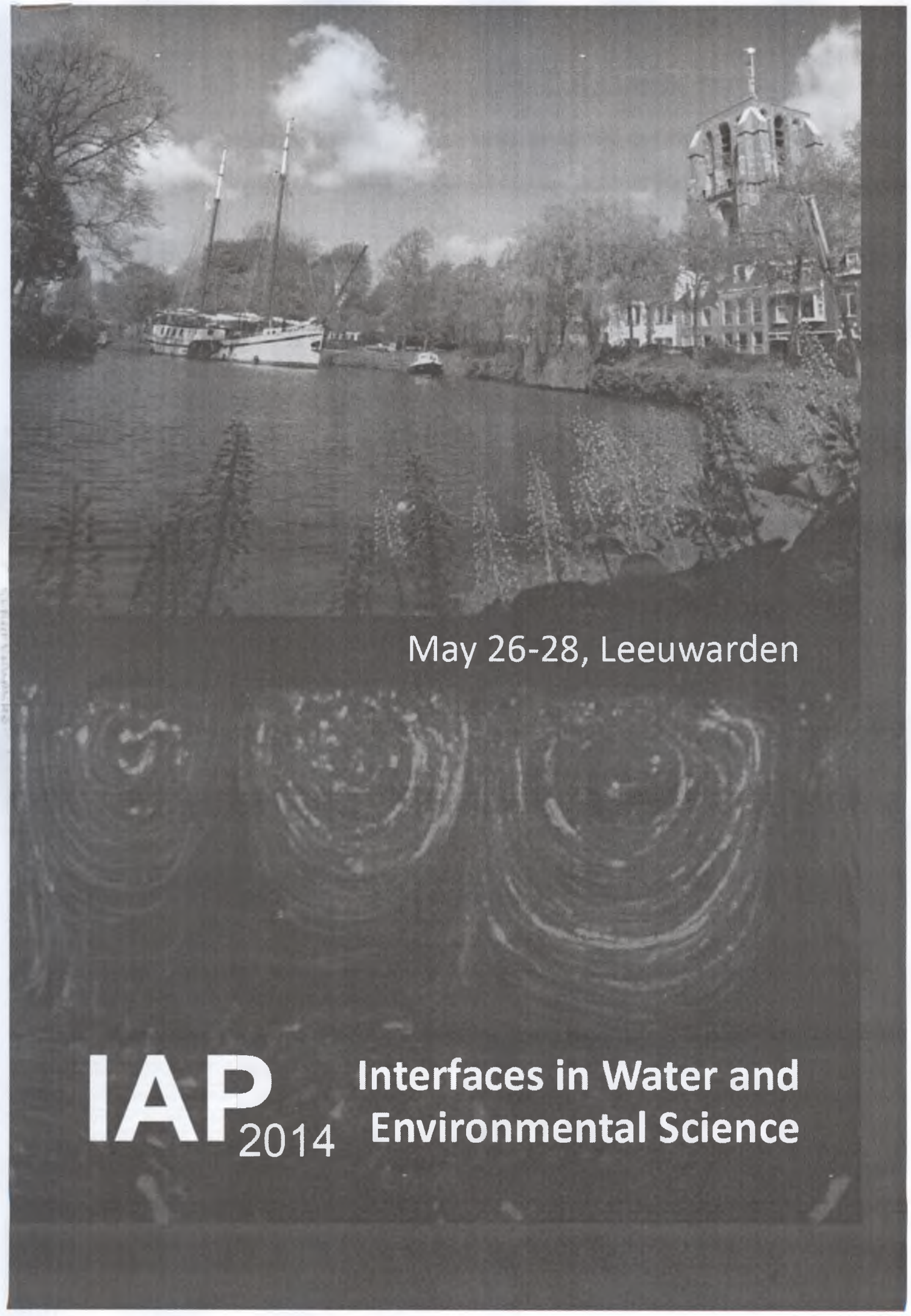
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Regulation of biodispersies stability by catonic polymers

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One of the factors limiting the widely use of cells of microorganisms in water treatment, is the difficulty of separating them from solutions. To solve this problem can be used flocculation of biological dispersion with polymers. Therefore we attempted to flocculation of yeast cells Sacharomyces cerevisae, algae and spherosome Shlorella vulgaris and plant cells spherosome by using cationic polymers like polyethyleneimine (PEI) and polydimethyldiallylammonium chloride (PDMDAAH).

Suspension of yeast cells and spherosome is fairly stable, the value of their optical density only slightly changed over time. Introduction of the suspension of yeast cells Sacharomyces cerevisae and algae Shlorella vulgaris solutions of PDMDAAH and PEI with concentration range 10^{-6}-10^{-1} base-mol/l leads to a substantial decrease in their optical density, and with increasing polymer concentration to increase the settling rate of the particles. This is due to flocculation of biodispersions in result of adsorption on them the polymer macromolecules.

Analysis of data on the aggregation of yeast cells, algae and spherosome of plant cells in the presence of PEI and PDMDAAH, change their electrokinetic potential, PEI adsorption on the surface of yeast cells suggests that along with flocculation by neutralization mechanism in these systems occurs due to aggregation on account of bridge formation. This is confirmed by experiments on the change of the reduced viscosity of the cell-PEI.

Calculation of the interaction energy of cells in the presence of polymers is difficult because of the complexity into account the specific adsorption of polymer macromolecules. On the cell surface interaction energy values Sacharomyces cerevisae cells in a medium of sodium chloride are high in a wide range of distances between the particles, the negative energy values are found only at distances greater than 6500Å. From this it follows that the flocculation of yeast cells with cationic polymers proceeds by a mechanism for further aggregation accompanied by the formation of the amorphous structure.