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Pattern formation in two-dimensional binary mixtures of colloids interacting via short-ranged interactions CARLOS MENDOZA, ERASMO BATTA, Materials Research Institute-UNAM — We report Monte Carlo simulations on the pattern formation in a binary mixture of colloidal particles interacting via short ranged potentials. Such potentials consist of a hard-core square-shoulder interaction if the particles are of the same type and of a hard-core square-well if they are of different type. For 50/50 mixtures, we find a rich variety of patterns that can be grouped mainly in alternate strips each one consisting of particles of the same type or aggregates that self-assembly in a regular square lattice. For mixtures in which the are more particles of one of the species then a phase separation is observed, one of the separated phases consists only of particles of the dominant type while the other is a mixture of both types of particles.

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