

Powder-rubbing을 이용한 마이크로입자 모노레이어 단결정 조립 및 응용

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Structural colors originate from purely physical structures, rather than being inherent colors. Scientists have been inspired to mimic the structures found in nature, the practical realization of these structures still presents a great challenge. We have recently introduced unidirectional rubbing of a dry particle powder on a rubbery surface as a quick, highly reproducible means to fabricate a single crystal monolayer assembly of particles over an unlimited area. This talk uses the particle-rubbing process to a novel practical fine-art painting, structural color painting (SCP). SCP is based on varying iridescence according to the crystal orientation, as controlled by the rubbing direction. This painting technique can be applied on curved surfaces, which enriches the objects to be painted and helps the painter mimic the structures found in nature. It also allows for quick fabrication of complicated particle-assembly patterns, which enables replication of paintings. This talk also deals with possible applications related with photonic crystals and lithography.