Engineering electronic matter with exciton polaritons

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Recently, there has been much interest in using light to manipulate the properties of materials, thus opening the prospect of realizing states of matter that go beyond those allowed by the constraints imposed by material science or chemistry [1]. In this talk, I will explore how the behavior of electronic and excitonic systems can be modified in the regime of strong light-matter coupling. I will particularly focus on exciton polaritons in semiconductor microcavities, where the coupling to light can enhance the interactions between charges [2] and lead to superconductivity at elevated temperatures in atomically thin materials.

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References

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