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Propagation and guiding of exciton polaritons in a patterned microcavity with an embedded graphene layer GERMAN KOLMAKOV, OLEG BERMAN, ROMAN KEZERASHVILI, New York City College of Technology, City University of New York — We consider propagation of a Bose-Einstein condensate (BEC) of exciton polaritons formed in a high-quality microcavity with an embedded quantum well or a gapped graphene layer. We study the effects of patterning of the microcavity by using materials with different electric or optical properties that create the potential landscape for the polaritons in the microcavity plane. The landscapes that enable one to guide the polariton BEC propagation and deliver the polaritons to a desired location are discussed. The possibility to govern the polariton propagation in a microcavity with the embedded graphene by dynamically changing the band gap in the graphene layer by means of an external electric field is considered.

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