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Title: Substrate dependence on the early relaxation stages of photoexcited carriers in monolayer graphene

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Photocarrier dynamics of graphene on various substrates is studied and compared.

Surface polar phonons are found to be of great relevance to the relaxation times.

Substrate induced screening dims the carrier-carrier scattering activity. The graphene-Al₂O₃ interface has the biggest impact of all the cases accounted for.

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