

## Dielectric properties of nematic liquid crystal doped with Graphene nanoplates Mohammad Hatefi Chaharborj<sup>1</sup>, Ali Maleki<sup>2</sup>

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**Abstract** In this paper, the influence of Graphene nanoplates on dielectric properties of planar and homeotropic oriented nematic liquid crystals (NLCs) were studied during the temperature interval of 298 - 322 °K. It was found that the dielectric permittivity was considerably increased by adding Graphene mass percentages. The obtained dielectric anisotropy ( $\epsilon_a$ ) have shown an immense increment in the value of 10% wt. graphene doped NLCs. These results were assigned to the strong dipole-dipole interaction between the graphene nano plates and the surrounding LC molecules.

### References

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### Figures

