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## Optical and electrical properties of CVD grown monolayer graphene samples subjected to ion irradiation

Optical and electrical properties in series of CVD grown monolayer graphene samples subjected to ion irradiation by different ions and doses were studied. Ion irradiation results in a redistribution of the intensity of main Raman scattering lines and to a significant increase of resistivity (about four orders of magnitude), accompanied by the change in the mechanism of conductivity. Stability of a disorder introduced by ion irradiation was studied during the long-term ageing as well as reversibility of the destroyed graphene structure after annealing of radiation damage.

Asymmetry of electron and hole mobility was observed in pristine samples with metallic conductivity. It was shown that in irradiated samples with hopping conductivity, magnetoresistance is negative in perpendicular magnetic fields and positive in parallel fields. Explanatory models for the observed effects are discussed

### References

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**Figure 1:**  $\Delta R/R$  as a function of  $B$  for irradiated sample with hopping mechanism of conductivity in parallel and perpendicular magnetic fields at different temperatures shown near each curve

