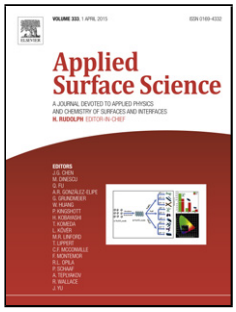

Title: Adsorption behavior of Co anchored on graphene sheets towards NO, SO_2, NH_3, CO and HCN molecules

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- In contrast to the pristine graphene, a vacancy defect in graphene strongly stabilizes the Co atom.
- The positively charged of Co atom on graphene can regulate the stability of gas molecules.
- Different gas molecules can modulate the electronic structure of Co-graphene systems.
- The adsorbed NO on Co-graphene can effectively regulate the magnetic properties of systems.