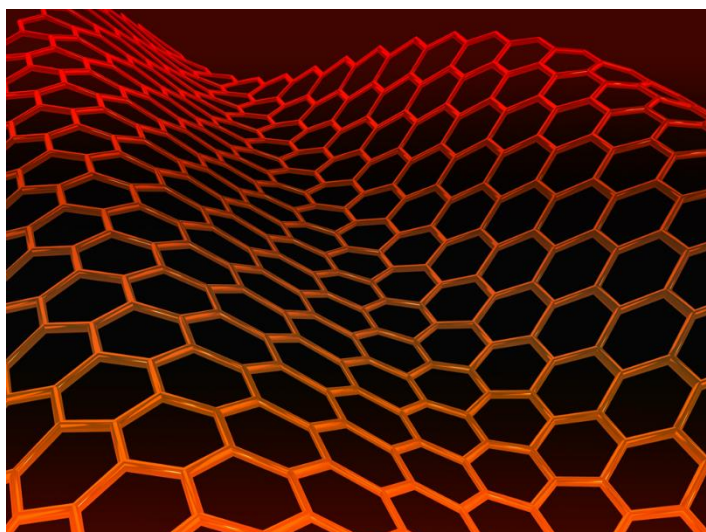


Carbon compounds – a question of the surface and how to determine it

Introduction

Carbon occurs in many different allotropic modifications, with very different physical properties and therefore can be used in a wide range of applications. Carbon black takes many different forms; as a pigment and in the rubber industry, an abrasive in the form of diamond and as a lubricant due to its layer structure in the form of graphite. conductive modifications are also possible, graphite and CNT can be used as an admixture to polymers to increase their conductivity, but also as an electrode material, e.g. in fuel cells (SOFC) or energy storage (Li-ion batteries).



Although the modifications differ strongly macroscopically, the surface chemistry is comparable, but also very complex. Due to production, purification and specific surface modification, different functional groups (such as carboxyls, lactones, phenols, carbonyls, anhydrides) are formed, which have a decisive influence on processing and product properties.