PIEZOÉLECTRICITÉ DANS DES NANOFILS DE ZNO : DOPAGE ET POLARITÉ

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The biocompatible ZnO nanowires made of abundant noncritical elements have emerged as potential candidates for the new generation of piezoelectric devices. However, ZnO nanowires with the piezoelectric wurtzite structure can exhibit the O- or Zn-polarity and contain a large number of n-type defects when grown using the low-temperature chemical bath deposition, which play a significant role in a variety of fundamental processes. Here, an overview of the effects of polarity on the nucleation & growth mechanisms, doping, electrical contacts, and piezoelectric devices is presented and discussed in the light of the recent experimental and theoretical data available.