Supplementary information:

Presence of byproducts in the polymer

Concerning the presence of possible byproducts from the reaction (such as KC1), none were observed. It is possible that K+ and Cl- are dispersed inside the polymer as a counterion after the redox reaction. Another possibility is that the KCl crystals dissolve themselves in the developer. Finally, it is possible that the low electron density of KCl makes them invisible to the TEM if the crystals are very small.
In order to obtain more information, we have prepared a sample with diluted KCl until saturation and DNQ-novolac without metallic components. The TEM images of this sample show small crystals with a contrast much smaller than that observed with the metallic nanoparticles, which makes it impossible to confuse them. The image shows a 1000 nm KCl crystal and two pieces of polymer.

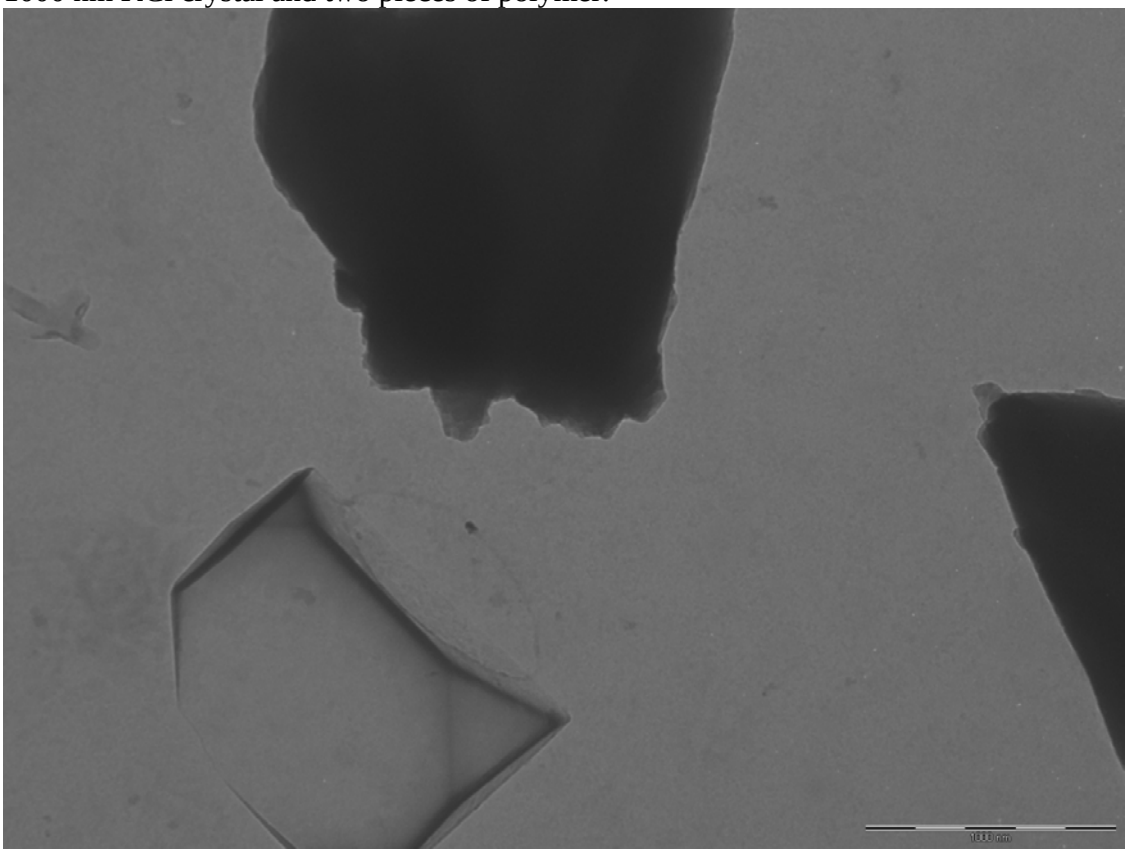

Fig.1. TEM image of KCl crystal and pieces of novolac obtained from a sample prepared from a saturated dissolution of KCl in novolac without metallic salts (scale bar = 1000 nm).

The low contrast of the KCl could explain the failure to observe possible KCl crystals in the samples with metallic salts.
Moreover, the identity of the metallic nanoparticles is assured by the HRTEM images and the high contrast in the TEM images (which prevents any possible confusion with KCl crystals).