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Abstract:

α -Zirconium phosphate (ZrP) and Montmorillonite (MMT), two nano-dimensional materials that have good gas barrier properties, have each been combined with polyvinyl alcohol (PVA) to create nanocomposites that were then coated onto Polyethylene terephthalate (PET) via a one-step flow-assist coating technique. The nanocoatings have dramatically improved gas barrier properties of PET by four orders of magnitude, compared with that of uncoated PET. The UV-vis spectra also show that the coated films have high transparency. Ultimately, the goal of these studies is to create an effective nanocoating that can eventually be put to use in various applications, such as the food packaging industry.