

and realistic human modeling. In order for the system to function, it requires robust method for detecting human form from a given input of video streams. In this paper, we will present a human detection and tracking technique suitable for video surveillance which requires fast computations in addition of accurate results. The techniques we propose include adaptive background modeling for background subtraction, size-filter segmentation, head detection for group segmentation, shadow removal, as well as dynamic human tracking based on stochastic probabilities and histogram in both single and multi-cameras. In single camera tracking, we calculate the possibility of candidate in consecutive image frame belonging to a known human in previous frame based on geometric locations and motion information. In multi-camera tracking, we define certain human appearance model that describes human and match their physical properties obtained from earlier processing. In this paper we also propose several solutions for performance problem in terms of computational complexity within human detection.

PP-23 Hazardless Nanocomposite for Gas Barrier Potential

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Composites based on high density polyethylene (HDPE), ethylene propylene diene monomer (EPDM) and Organically Modified Montmorillonite (OMMT) clays were made by melt compounding followed by compression molding. Tensile testing, X-ray diffraction (XRD) and Transmission Electron Microscopy (TEM) were used to characterize the nanocomposites. The addition of clay, compatibilizer agent (Maleic Anhydride Polyethylene (MAPE)) and the exposure under Electron Beam Irradiation (EB) considerably improved the tensile properties of the composite system. Tensile Strength (MPa) and Tensile Modulus (MPa) were found to increase significantly with increasing clay content and decreasing as the clay content exceeds 4 wt% values. The largest improvement in composite mechanical properties occurred at clay loading levels of 4% (2-8 wt %) with EB Irradiation system followed by MAPE and unirradiated/untreated systems. Nearly 67% increase in tensile strength and 64% increase in tensile modulus were observed with EB irradiated system. The *d* spacings of the clay in nanocomposite were monitored using XRD and the extent of delamination was examined by TEM. The wide angle of XRD patterns showed the increased *d*-spacing of clay layers, indicating enhanced compatibility between HDPE and OMMT with the EB irradiated and addition of MAPE. TEM photomicrographs illustrated the intercalated and partially exfoliated structures of the nanocomposite with OMMT and MAPE system.

PP-36 VisUn-3D : Visualization of User Navigation Using 3D Maps in Virtual 3D Walk-Spaces for Mobile User

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VisUn-3D is a prototype for mobile user navigation using 3D model in a pervasive computing environment.

The contribution and the uniqueness of this work is that , we built a visualization of 3D campus maps inside 3D workspace at our campus environment to navigate several users at the same time by using their mobile device such as PDAs. The 3D rendering and GPS navigation are embedded into various wireless PDA or smart phone devices to allow the navigation of the users.

This approach could navigate more than 2 users in a 3D walk-space and at the same time navigate the users by showing their whereabouts in 3D projection mapped on the same picture. The map shows the location of the user in the scene to navigate to the location of another user to meet on the same image plane.