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Multilayer Polymeric Encapsulation of Flexible Organic Photovoltaic Devices PALLAVI MADAKASIRA, K. INOUE, S. LEE, A. ZAKHIDOV, University of Texas at Dallas — Flexible solar cells, based on conjugated polymeric D-A systems have stimulated considerable interest recently. We obtained efficiencies $\sim$4% in heat-treated PHT/PCBM based solar cells [1]. These have the advantage of being mounted easily on either a flat or curved surface. One of the major problems is their protection from degradation due to exposure to air and moisture under intense light irradiation.These necessitate use of flexible encapsulation. Parylene has been used to encapsulate various devices,like OLEDs [2,3]. It is stable when deposited on devices in vacuum. First results on conformal deposition on solar cells is reported here, and effects of protection depending on the thickness of parylene film. It provides pin-hole free coating for dielectric protection. [1] K. Inoue, R. Ulbricht, P. C. Madakasira, W.M. Sampson, S. Lee, J. Gutierrez, J. Ferraris and A. A. Zakhidov,Proc. of SPIE – Org. Photovoltaics V, 5520, p.256-262 (2004). [2]Z.Zhang, G.Xiao, J.Liu and C.P. Grover, *Fiber and Integrated Optics,22:343-355-2003* [3] Y.S. Jeong, B.Ratier, A. Moliton and L.Guyard, *Synthetic Materials 127 (2002) 189-193*

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