U.S. PATENT DOCUMENTS

5,032,461	A		7/1991	Shaw et al.
5,036,249	A		7/1991	Pike-Biegunski et al.
5,124,204	A		6/1992	Yamashita et al.
5,189,405	A		2/1993	Yamashita et al.
5,237,439	A		8/1993	Misono et al.
5,260,095	A		11/1993	Affinito
5,354,497	A		10/1994	Fukuchi et al.
5,395,644	A		3/1995	Affinito
5,427,638	A		6/1995	Goetz et al.
5,440,446	A		8/1995	Shaw et al.
5,536,323	A		7/1996	Kirlin et al.
5,547,508	A		8/1996	Affinito
5,554,220	A		9/1996	Forrest et al.
5,576,101	A		11/1996	Saitoh et al.
5,607,789	A		3/1997	Treger et al.
5,620,524	A		4/1997	Fan et al.
5,629,389	A		5/1997	Roitman et al.
5,654,084	A		8/1997	Egert
5,681,615	A		10/1997	Affinito et al.
5,681,666	A		10/1997	Treger et al.
5,684,084	A		11/1997	Lewin et al.
5,686,360	A	*	11/1997	Harvey, III et al. 438/126
5,693,956	A		12/1997	Shi et al.
5,711,816	A		1/1998	Kirlin et al.
5,725,909	A		3/1998	Shaw et al.
5,731,661	A		3/1998	So et al.
5,747,182	A		5/1998	Friend et al.
5,757,126	A		5/1998	Harvey, III et al.
5,759,329	A		6/1998	Krause et al.
5,771,562	A		6/1998	Harvey, III et al.
5,792,550	A		8/1998	Phillips et al.
5,811,177	A		9/1998	Shi et al.
5,811,183	A		9/1998	Shaw et al.
5,821,692	A		10/1998	Rogers et al.
5,844,363	A		12/1998	Gu et al.
5,872,355	A		2/1999	Hueschen
5,902,641	A		5/1999	Affinito et al.
5,902,688	A		5/1999	Antoniadis et al.
5,904,958	A		5/1999	Dick et al.
5,912,069	A		6/1999	Yializis et al.
5,922,161	A		7/1999	Wu et al.
5,945,174	A		8/1999	Shaw et al.
5,948,552	A		9/1999	Antoniadis et al.
5,952,778	A		9/1999	Haskal et al.
5,965,907	A		10/1999	Huang et al.
5,996,498	A		12/1999	Lewis
6,045,864	A		4/2000	Lyons et al.
6,083,313	A	*	7/2000	Venkatraman et al. . 106/287.14
6,083,628	A		7/2000	Yializis
6,084,702	A	*	7/2000	Byker et al. 106/31.17
6,146,225	A		11/2000	Sheats et al.
6,198,217	B1		3/2001	Suzuki et al.
6,268,695	B1	*	7/2001	Affinito 313/504
6,413,645	B1	*	7/2002	Graff et al. 426/126

FOREIGN PATENT DOCUMENTS

DE	19603746	4/1997
EP	0 299 753	1/1989
EP	0 340 935	11/1989
EP	0 390 540	10/1990
EP	0 547 550	6/1993
EP	0 590 467	4/1994
EP	0 722 787	7/1996
EP	0 777 280	6/1997
EP	0 787 826	8/1997
EP	0 916 394	5/1999
EP	0 931 850	7/1999
EP	0 977 469	2/2000
JP	63136316	6/1988
JP	64-18441	1/1989
JP	2-183230	7/1990
JP	08325713	12/1996
JP	09059763	3/1997
JP	10312883	11/1998
WO	WO 87 07848	12/1987
WO	WO 95 10117	4/1995
WO	WO 97 04885	2/1997
WO	WO 97 22631	6/1997
WO	WO 98 10116	3/1998
WO	WO 98 18852	5/1998
WO	WO 99 16557	4/1999
WO	WO 99 16931	4/1999
WO	WO 00 36665	6/2000

OTHER PUBLICATIONS

Shaw, D.G. et al., "Use of Vapor Deposited Acrylate Coatings to Improve the Barrie Properties of Metallized Film" 37th Annual Technical Conference Proceedings, 1994, pp. 240–244.

Hoffmann, G. et al., "Transparent Barrier Coatings by Reactive Evaporation" 37th Annual Technical Conference Proceedings, 1994, pp. 155–160.

Kukla, R. et al., "Transparent Barrier Coatings with EB–Evaporation, an Update" Thirteenth International Conference on Vacuum Web Coatings, 1999, pp. 223–233.

Hibino, N. et al., "Transparent Barrier A12O3 Coating by Activated Reactive Evaporation" Thirteenth International Conference on Vacuum Web Coating, 1999, pp. 234–246.

Henry, B.M. et al., "Microstructural Studies of Transparent Gas Barrier Coatings on Polymer Substrates" Thirteenth International Conference on Vacuum Web Coatings, 1999, pp. 265–273.

Bright, C.I. et al., Transparent Barrier Coatings Based on ITO for Flexible Plastic Displays, Thirteenth International Conference on Vacuum Web Coating, 1999, pp. 247–255.

Finson et al., "Transparent SiO2 Barrier Coatings: Conversion and Production Status" 37th Annual Technical Conference Proceedings, 1994, pp. 139–142.

Yializis, A., "High Oxygen Barrier Polypropylene Films Using Transparent Acrylate–A203 and Opaque A1–Acrylate Coatings" 38th Annual Technical Conference Proceedings, 1995, pp. 95–102.

Yamada, Y. et al., "The Properties of a New Transparent and Colorless Barrier Film" 38th Annual Technical Conference Proceedings, 1995, pp. 28–31.

Chahroudi, D., "Transparent Glass Barrier Coatings for Flexible Film Packaging" 34th Annual Technical Conference Proceedings, 1991, pp. 130–133.

Yializis et al., "Ultra High Barrier Films" 43rd Annual Technical Conference Proceedings, Denver, Apr. 15–20, 2000, pp. 404–407.

Felts, J.T., "Transparent Barrier Coatings Update: Flexible Substrates" 36th Annual Technical Conference Proceedings, 1993, pp. 324–331.

Norenberg H. et al., "Comparative Study of Oxygen Permeation Through Polymers and Gas Barrier Films" 43rd Annual Technical Conference Proceedings, Denver, Apr. 15–20, 2000, pp. 347–351.

Henry, B.M. et al., "Microstructural and Gas Barrier Properties of Transparent Aluminum Oxide and Indium Tin Oxide Films" 43rd Annual Technical Conference Proceedings, Denver, Apr. 15–20, 2000, pp. 373–378.