

Comment

Comments on Lynch. Pyrrolyl Squaraines—Fifty Golden Years. *Metals* 2015, 5, 1349–1370

Daniel E. Lynch

Exilica Limited, The Technocentre, Puma Way, Coventry CV1 2TT, UK;
E-Mail: d.lynch@exilica.co.uk; Tel.: +44-247-765-8505

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In addition to the papers (1965–2005) referenced in the main article [1] pyrrolyl squaraines were listed in a 1974 US patent from IBM as one of the examples of a squaraine dye that can be used in electrophotographic plates [2], a 1979 US patent from Eastman Kodak in relation to electrophoretic migration imaging processes [3], a 1982 US patent for use in electrophotographic reproduction [4], two concurrent 1988 US patents from Eastman Kodak for use as negative working photoresists [5] and imaging dyes [6], a 2004 US patent from Asahi Denka for their use as optical filters and optical recording materials [7], and a 2005 US patent from BASF for use in optical data storage applications [8].

References from 2006 onwards listing pyrrolyl squaraines have included a 2007 US patent from KyoWa Hakko Chemical covering their use as optical filters for electronic display devices [9], a computational study in 2007 on the diradical nature of both squaraine and croconaine dyes [10], a 2008 US patent from Adeka Corporation for use as optical filters and optical recording materials [11], a 2008 US patent from Fuji Xerox for use as a colorant [12], a 2009 US patent from Kyowa Hakko Chemical for use as optical filters [13], a 2009 review (in Spanish) of oxocarbons and pseudooxocarbons [14], a 2010 US patent from Fuji Xerox for use as a colorant [15], and a 2013 US patent from Adeka Corporation for use in a color conversion filter [16].

Conflicts of Interest

The author declares no conflicts of interest.

References

1. Lynch, D.E. Pyrrolyl Squaraines—Fifty Golden Years. *Metals* **2015**, *5*, 1349–1370.
2. Champ, R.B.; Shattuck, M.D. Sensitive electrophotographic plates. U.S. Patent 3,824,099, 16 July 1974.

3. Haley, N.F.; Krutak, J.J.; Ott, R.J. Electrophotosensitive materials for migration imaging processes. U.S. Patent 4,175,956, 27 November 1979.
4. Chang, M.S.H.; Edelman, P.G. Squarylium dye and diene blue dye charge generating layer mixture for electrophotographic light sensitive elements and processes. U.S. Patent 4,353,971, 12 October 1982.
5. Farid, S.Y.; Haley, N.F.; Moody, R.E.; Specht, D.P. Negative working photoresists responsive to longer wavelengths and novel coated articles. U.S. Patent 4,743,530, 10 May 1988.
6. Farid, S.Y.; Haley, N.F.; Moody, R.E.; Specht, D.P. Dye sensitized photographic imaging system. U.S. Patent 4,743,531, 10 May 1988.
7. Shimizu, M.; Shigeno, K.; Yano, T. Cyanide compound, optical filter, and optical recording material. U.S. Patent 2004/0197705, 7 October 2004.
8. Berneth, H.; Bruder, F.K.; Haese, W.; Hassenruck, K.; Kostromine, S.; Landenburger, P.; Sommermann, T.; Stawitz, J.W.; Hagen, R.; Oser, R.; *et al.* Squarylium dyes as light-absorbing compound in the information layer of optical data carriers. U.S. Patent 2005/0142489, 30 June 2005.
9. Shimizu, I.; Kinugasa, M.; Toyoda, H.; Ikuta, M.; Katagi, K. Filters of Electronic Displays. U.S. Patent 7,242,542, 10 July 2007.
10. Srinivas, K.; Prabhakar, C.; Devi, C.L.; Yesudas, K.; Bhanuprakash, K.; Rao, V.J. Enhanced diradical nature in oxyallyl derivatives leads to near infra red absorption: A comparative study of the squaraine and croconate dyes using computational techniques. *Phys. Chem. A* **2007**, *111*, 3378–3386.
11. Aoyama, Y.; Shigeno, K. Cyanide compounds, optical filters, and optical recording materials. U.S. Patent 7,745,632, 29 June 2010.
12. Hasegawa, S.; Anazawa, K.; Ito, Y.; Tian, M.; Hirokawa, K.; Furuki, M.; Horiuchi, K.; Matsubara, T.; Miyahara, T.; Watanabe, M. Colorant and toner. U.S. Patent 8,007,975, 30 August 2011.
13. Yamano, J.; Ukai, K.; Kinugasa, M. Optical filter. U.S. Patent 2009/0074373, 19 March 2009.
14. De Oliveira, V.E.; Diniz, R.; de Oliveira, L.F.C. Oxocarbonos, Pseudo-oxocarbonos e esuarainas. *Quim. Nova* **2009**, *32*, 1917–1925.
15. Ito, Y.; Hasegawa, S.; Tian, M.; Watanabe, M.; Hirokawa, K.; Anazawa, K.; Miyahara, T.; Matsubara, T.; Furuki, M. Colorant. U.S. Patent 7,667,047, 23 February 2010.
16. Maeda, Y.; Shigeno, K.; Ariyoshi, T.; Okada, M.; Kanehara, Y. Color conversion filter. U.S. Patent 2013/0147345, 13 June 2013.