

บรรณานุกรม

กลุ่มวิศวกรรมพลาสติก. 2547. เทคโนโลยีก้าวหน้า นานาสาระใน โลกพลาสติก. 3. ศูนย์เทคโนโลยี
โลหะและวัสดุแห่งชาติ (เอ็มเทค).

ค่าความสามารถในการละลาย. 2549. สืบค้นจาก : <http://www.tamino.com>, (21/03/2549)

จินตมัย สุวรรณประทีป. 2547. การทดสอบสมบัติทางกลของพลาสติก. 21 – 131. สมาคมส่งเสริม
เทคโนโลยี (ไทย - ญี่ปุ่น). กรุงเทพมหานคร

ชนิดดินเหนียว. 2548. สืบค้นจาก : <http://www.mindat.org>, (20/06/2548)

ไพบุลย์ วิวัฒน์วงศ์วนา. 2546. เคมีดิน. คณะเกษตรศาสตร์ มหาวิทยาลัยเชียงใหม่.

พื้นที่ผิวและความสามารถในการแลกเปลี่ยน ไอออนของดินเหนียวชนิดต่างๆ. 2549. สืบค้นจาก :
<http://www.state.as.us/agc/clay.html>, (10/03/49)

เบนโทไนท์. 2549. สืบค้นจาก : <http://www.READE.com>, (10/01/2549)

พื้นที่ผิวสัมผัส. 2549. สืบค้นจาก : <http://www.tulane.edu>, (10/01/2549)

รอฮีม ปรามาท. 2547. นาโนเทคโนโลยี นวัตกรรมจับปฏิวัติโลก. พิมพ์ครั้งที่ 3. กรุงเทพมหานคร.

แมนน์ อมรสิทธิ์ และ อมร เพชรสม. 2537. Principles and Techniques of Instrumental Analysis. จุฬาลงกรณ์มหาวิทยาลัย กรุงเทพมหานคร

เดมศักดิ์ ศรีศิริรินทร์. 2548. เอกสารประกอบการบรรยาย Fabrication of Thin Organic Films. คณะ
วิทยาศาสตร์ มหาวิทยาลัยมหิดล.

สมการของแบรค. 2549. สืบค้นจาก : <http://www.binghamton.edu>, (20/02/2549)

สมบัติทางกายภาพของดินเหนียวมอนท์โมริลโลไนท์. 2549. สืบค้นจาก :

<http://www.READE.com>, (10/01/49)

อะลูมิเนียมออกไซด์รอล. 2548. สืบค้นจาก : <http://www.ethomas.web.wesleyan.edu>, (2548)

Sivakugan, N. 2001. เอกสารประกอบการเรียนวิชา Clay Mineralogy. USA

“ASTM C837-81 Standard Test Methods for Methylene Blue Index of Clay”, Annual Book of ASTM Standards. Part 17: 904-905.

“ASTM D412 – 98 Standard Test Methods for vulcanized rubber and thermoplastic elastomers-tension”, Annual Book of ASTM Standards. Section 9: 44-57.

“ASTM D570-98 Standard Test Method for Water Absorption of Plastics”, Annual Book of ASTM Standards. Section 9: 32 – 34.

“ASTM D1822 - 99 Standard Test Method for Tensile-Impact Energy to Break Plastics and Electrical Insulating Materials”, Annual Book of ASTM Standards. Section 9: 442-451.

“ASTM D5890 - 95 Standard Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners”, Annual Book of ASTM Standards. Section 4: Volume 09: 1418-1419.

Agag, T. and Koga, T. and Takeichi, T. 2001. “Studies on thermal and mechanical properties of polyimide-clay nanocomposites”, *Polymer*. 42 (2001), 3399-3408.

Alexandre, Michael and Dubois, Philippe. “Polymer-layered silicate nanocomposites: preparation, properties and uses of a new class of materials”, *Materials Science and Engineering*. 28 (2000), 1-63.

- Arroyo, M. and Lopez-Manchado, M.A. and Herrero, B. "Organo-montmorillonite as substitute of carbon black in natural rubber compounds", *Polymer*. 44 (2003), 2447-2453.
- Aphiwantrakul, S., Srihirin, T., Triampo, D., Putiworanat, R., Limpanart, S., Osotchan, T. and Udomkichdecha, W. "Role of the Cation-Exchange Capacity in the Formation of Polystyrene-Clay Nanocomposites by In Situ Intercalative Polymerization". *Journal of Applied Polymer Science*. 95 (2005), 785-789.
- Burgentzle, D., Duchet, J., Gerard, J.F., Jupin, A. and Fillon, B. 2004. "Solvent-based nanocomposite coatings I. Dispersion of Organophilic montmorillonite in organic solvents", *Journal of Colloid and Interface Science*. 278 (2004), 26-39.
- Carrado, Kathleen A. 2000. "Synthetic organo- and polymer-clays: preparation, characterization, and materials applications", *Applied Clay Science*. 17 (2000), 1 – 23
- Chen, Guangming., Ma, Yongmei, and Qi, Zongneng. 2001. "Preparation and morphological study of an exfoliated polystyrene/montmorillonite nanocomposite", *Scripta mater*. 44 (2001), 125-128.
- Choi, H.J., Kim, J.W., Joo, J and Kim, B.H. 2001. "Synthesis and electrorheology of emulsion intercalated PANI-clay nanocomposite", *Synthetic Metals*. 121 (2001) 1325-1326.
- Delozier, D.M., Orwoll, R.A., Cahoon, J.F., Ladislaw, J.S., Smith Jr, J.G. and Connell, J.W. 2003. "Polyimide nanocomposites prepared from high-temperature, reduced charge organoclays", *Polymer*. 44 (2003) 2231-2241.
- Ding, Chao., Jia, Demin., He, Hui., Guo, Baochun and Hong, Haoqun. 2004. "How organo-montmorillonite truly affects the structure and properties of polypropylene", *Polymer testing*. 24 (2005), 94-100.

- Fu, Xiaon and Qutubuddin, Syed. 2000. "Synthesis of polystyrene–clay nanocomposites", *Materials Letters*. 42 (2000), 12–15.
- Gong, Fangling., Feng, Meng., Zhao, Chungui., Zhang, Shimin., and Yang, Mingshu. 2004. "Particle configuration and mechanical properties of poly(vinyl chloride)/montmorillonite nanocomposites via in situ suspension polymerization", *Polymer Testing*. 23 (2004), 847–853.
- Gopakumar, T.G., Lee, J.A., Kontopoulou, M., and Parent, J.S. 2002. "Influence of clay exfoliation on the physical properties of montmorillonite/polyethylene composites", *Polymer*. 43 (2002), 5483-5491.
- Gorrasi, Giuliana., *et al.* 2003. "Vapor barrier properties of polycaprolactone montmorillonite nanocomposites: effect of clay dispersion", *Polymer*. 44 (2003), 2271-2279.
- Grim, Ralph E. 1968. *Clay mineralogy*. 2nd ed. USA : McGraw - Hill Book company.
- Hayama, Masayo., *et al.* 2004. "Nanoscopic behavior of polyvinylpyrrolidone particles on polysulfone/polyvinylpyrrolidone film", *Biomaterials*. 25 (2004). 1019-1028.
- He, Hongping., *et al.* 2005. "Changes in the morphology of organoclays with HDTMA+ surfactant loading", *Applied Clay Science*. xx (2005) xxx-xxx
- He, Hongping., Frost, Ray L., Bostrom, Thor., Yuan, Peng., Duong, Loc., Yang, Dan., Xi, Yunfei and Klopogge, Theo. 2006. "Influence of cationic surfactant removal on the thermal stability of organoclays", *Journal of colloid and Interface Science*. 295 (2006), 202-208
- Hotta, S. and Paul, D.R. 2004. "Nanocomposites formed from linear low density polyethylene and organoclays", *Polymer*. 45 (2004), 7639-7654.

- Huang, Jun-Chao., Zhu, Zi-kang., Yin, Jie., Qian, Xue-feng and Sun, Yang-Yang. 2001. "Poly (etherimide)/montmorillonite nanocomposites prepared by melt intercalation: morphology, solvent resistance properties and thermal properties", *Polymer*. 42 (2001), 873-877.
- Kim, G.-M., Lee, D.-H., Hoffmann, B., Kressler., and Stoppelmann, G. 2001. "Influence of nanofillers on the deformation process in layered silicate/polyamide-12 nanocomposites", *Polymer*. 42 (2001), 1095-1100.
- Jash, Panchatapa., Wilkie, Charles A., 2005. "Effects of surfactants on the thermal and fire properties of poly(methyl methacrylate)/clay nanocomposite", *Polymer Degradation and Stability*. 88 (2005), 401-406.
- Lee, Dongkyu and Char, Kookheon. 2002. "Thermal degradation behavior of polyaniline in polyaniline/Na⁺ - montmorillonite nanocomposites", *Polymer Degradation and Stability*. 75 (2002), 555-560.
- Lee, J.Y. and Lee, H.K. 2004. "Characterization of organobentonite used for polymer nanocomposites", *Materials Chemistry and physics*. 85 (2004), 410-415.
- Liang, Zhu-Mei., *et al.* 2003. "Polyimide/montmorillonite nanocomposites based on thermally stable, rigid-rod aromatic amine modifiers", *Polymer*. 44 (2003), 1391-1399.
- Liang , Zhu-Mei., Yin, Jie., Wu, Jian-Hua., Qiu, Zi-Xue and He, Fei-Feng. 2004. "Polyimide/montmorillonite nanocomposites with photolithographic properties", *European Polymer Journal*. 40 (2004), 307-314.
- Limpanart, S., Khunthon, S., Taepaiboon, P., Supaphol, P., Srihirin, T., Udomkichdecha, W. and Boontongkong, Y. 2005. "Effect of the surfactant coverage on the preparation of

- polystyrene-clay nanocomposites prepared by melt intercalation". *Materials Letters*. 59 (2005), 2292-2295.
- Liu, Tianxi, Lim, Kian Ping., Tjiu, Wuiwui Chauhari., Pramoda, K.P. and Chen, Zhi-Kuan. 2003. "Preparation and characterization of nylon 11/organoclay nanocomposites", *Polymer*. 44 (2003), 3529-3535.
- Liu, Xiaohui and Wu, Qiuju. 2001. "PP/Clay nanocomposites prepared by grafting-melt intercalation" , *Polymer*. 42 (2001), 10013-10019.
- Magaraphan, Rathanawan., Lilayuthalert, Wittaya., Siriwat, Anuvat., and Schwank, Johannes W. 2001. "Preparation, structure, properties and thermal behavior of rigid-rod polyimide/montmorillonite nanocomposites", *Composites Science and Technology*. 61 (2001), 1253–1264.
- Minisini, B and Tsohnang, F. 2005. "Molecular mechanics studies of specific interactions in organomodified clay nanocomposite", *Composites: Part A*. 36 (2005), 531-537.
- Moet, Abdel Samie and Akelah, Ahmed. 1993. "Polymer-clay nanocomposites: polystyrene grafted onto montmorillonite interlayers", *Materials Letters*. 18 (1993), 97-102.
- Okamoto, Masami., Marita, Satoshi., Taguchi, Hideyuki., Kim, Yong Hoon., Kotaka, Tadao., and Tateyama, Hirishi. 2000. "Synthesis and structure of smectic clay/poly(methyl methacrylate) and clay/polystyrene nanocomposites via in situ intercalative polymerization", *Polymer*. 41 (2000), 3887-3890.
- Ozacar, Mahmut. and Sengil, I. Ayhan. "A two stage batch adsorber design for methylene blue removal to minimize contact time", *Journal of Environmental Management*. 80 (2006), 372-379

- Pinnavaia and Beall, 2001. "Polymer-Clay Nanocomposites", John Wiley&Sons,Ltd.
- Pual, D.R., Zeng, Q.H., Yu, A.B. and Lu, G.Q. 2005. "The swelling and molecular packing in organoclays", *Journal of colloid and Interface Science*. 292 (2005), 462-468.
- Qin, Huaili., *et al.* 2003. "Thermal stability and flammability of polyamide 66/montmorillonite nanocomposites", *Polymer*. 44 (2003), 7533–7538.
- Qin, Huaili., *et al.* 2003. "Photo-oxidative degradation of polyethylene/montmorillonite nanocomposite", *Polymer Degradation and Stability*. 81 (2003), 497–500.
- Ray, Suprakas and Okamoto, Masami. 2003. "Polymer/layered silicate nanocomposites: a review from preparation to processing", *Progress in Polymer Science*. 28 (2003), 1539-1641.
- Riva, A., Zanetti, M., Braglia, M., Camino, G., and Falqui, L. 2002. "Thermal degradation and rheological behaviour of EVA/ montmorillonite nanocomposites", *Polymer Degradation and Stability*. 77 (2002), 299-304.
- Sandler, S.R., Bonesteel, karo. J.-A., Pearce, E.M. 1998. "In Polymer Synthesis and characterization : Laboratory manual, Academic press, Newyork, ch. 17". 1998
- Salahuddin, Nehal and Shehata, Mohamed. 2001. "Polymethylmethacrylate-montmorillonite composites: Preparation, characterization and properties", *Polymer*. 42 (2001), 8379-8385.
- Shen, Zhiqi., Simon, George P. and Cheng, Yi-Bing. "Coparation of solution intercalation and melt intercalation of polymer-clay nanocomposites". *Polymer*. 43 (2002), 4251-4260.

- Shah, Rhutesh K. and Paul, D.R. 2006. "Organoclay degradation in melt processed polyethylene nanocomposites", *Polymer*. 47 (2006), 4075-4084.
- Sharif, Jamaliah., *et al.* 2004. "Preparation and properties of radiation crosslinked natural rubber/clay nanocomposites", *Polymer Testing*. (2004), 1-7.
- Smith, William F. Principles of materials science and engineering. 2004
- Sur, G.S. and Sun, H.L. and Lyu, S.G. and Mark, J.E. 2001. "Synthesis, structure, mechanical properties, and thermal stability of some polysulfone/organoclay nanocomposite", *Polymer*. 42 (2001), 9783-9789.
- Tang, Yong., Hu, Yuan., Wang, ShaoFeng., Gui, Zhou., Chen, Zuyou., and Fan, WeiCheng. 2002. "Preparation and flammability of ethylene-vinyl acetate copolymer/montmorillonite nanocomposites", *Polymer Degradation and Stability*. 78 (2002), 555-559.
- Udel polysulfone Design Guide. Solvay Advanced Polymer, L.L.C
- Uthirakumar, Periyayya., Nahm, Kee Suk., Hahn, Yoon Bong. and Lee, Youn-Sik. 2004. "Preparation of polystyrene/montmorillonite nanocomposites using a new radical initiator-montmorillonite hybrid via in situ intercalative polymerization", *European Polymer Journal*. 40 (2004), 2437-2444.
- Wang, Ki Hyun., *et al.* 2001. "Synthesis and Characterization of maleated polyethylene/clay nanocomposites", *Polymer*. 42 (2001), 9819-9826.
- Wang, Shongfang., Hu, Yuan., Wang, Zhengzhou., Yong, Tang., Chen, Zuyao. And Fan, Weicheng. 2003. "Synthesis and characterization of polycarbonate/ABS/

montmorillonite nanocomposites”, *Polymer Degradation and stability*. 80 (2003), 157-16.

Xiong, Jiawen., Liu, Yunhang., Yang, Xiaohui., and Wang, Xinling. 2004. “Thermal and mechanical properties of polyurethane /montmorillonite nanocomposites based on a novel reactive modifier”, *Polymer Degradation and Stability*. 86 (2004), 549-555

Yang, S.M. and Chen, K.H. 2003. “Synthesis of polyaniline-modified montmorillonite nanocomposite”, *Synthesis Metals*. 135-136 (2003), 51-52.

Yang, Yong., Zhu, Zi-kang., Yin, Jie., Wang, Xin-Yu., and Qi, Zong-eng. 1999. “, Preparation and properties of hybrids of organo-soluble polyimide and montmorillonite with various chemical surface modification methods”, *Polymer*. 40 (1999), 4407–4414.

Yeh, Jui-Ming., Liou, Shir-Joe., Lai, Chiung-Yu, and Wu Pei-Chi. 2001. “Enhanced Corrosion Protection Effect in Polyaniline via the Formation of Polyaniline-clay Nanocomposites materials”, *Chem.Mater*. 13 (2001), 1131-1136.

Yeh, Jui-Ming., Chen, Chi-Lun., Chen, Yen-Chen., Ma, Chin-Yi., Lee, Kueir-Rarn., Wei, Yen., and Li, Shuxi. 2002. “Enhancement of Corrosion protection effect of poly(o-ethoxyaniline) via the formation of poly(o-ethoxyaniline)-clay nanocomposite materials”, *Polymer*. 43 (2002), 2729-2736.

Yeh, Jui-Ming., Chen, Chi-Lun., Chen, Yen Chen., Ma, Chin-Yi., Huang, His-Ya. and Yu, Yuan-Hsiang. 2004. “Enhanced Corrosion Prevention Effect of Polysulfone-Clay Nanocomposite Materials by Solution Dispersion”, *Applied Polymer science*. 92 (2004), 631-637.

- Yoshimoto, Shoji., Ohashi, Fumihiko., Ohnishi, Yasushi., and Nanami, Toru. 2004. "Synthesis of polyaniline–montmorillonite nanocomposites by the mechanochemical intercalation method", *Synthetic Metals*. 145 (2004), 265–270.
- Zanetti, M., Camino, G., Thomann, R. and Mulhaupt, R. 2001. "Synthesis and thermal behavior of layered silicate-EVA nanocomposites", *Polymer*. 42 (2001), 4501-4507.
- Zhai, Hongbo., Xu, Weibing., Guo, Hanyang., Zhou, Zhengfa., Shen, Shijun and Song, Qiusheng. "Preparation and characterization of PE and PE-g-MAH/montmorillonite nanocomposites", *European Polymer Journal*. 40 (2004), 2539-2545.
- Zhang, Jinguo and Wilkie, Charles A., 2003. "Preparation and flammability properties of polyethylene–clay nanocomposites", *Polymer Degradation and Stability*. 80 (2003), 163–169.
- Zhang, Jinguo., Jiang, David D. and Wilkie, Charles A., 2005. "Polyethylene and polypropylene nanocomposites based upon an oligomerically modified clay", *Thermochimica Acta*. 430 (2005), 107-113.
- Zhang, Wei'an., Dazhu, Chen., Zhao., Quanbao. and Fang, Yue'e. 2003. "Effects of different kinds of clay and different vinyl acetate content on the morphology and properties of EVA/clay nanocomposites", *Polymer*. 44 (2003), 7953-7961
- Zhang, Yu-Qing., Lee, Joong-Hee., Jang, Han-Jong., and Nah, Chang-Woon. 2004. "Preparing PP/clay nanocomposites using a swelling agent", *Composites: Part B*. 35 (2004), 133-138.
- Zhang, Yu-Qing., *et al.* 2004. "Polypropylene–clay nanocomposites prepared by in situ grafting-intercalating in melt", *Composites Science and Technology*. 64 (2004), 1383–1389.

Zhang, Yi-He., Wu, Jun-Tao., Fu, Shao-Yun., Yang, Shi-Yong., Li, Yan., Fan, Lin., Li, Robert K.-Y., Li, Lai Fang., and Yan, Qing. 2004. "Studies on characterization and cryogenic mechanical properties of polyimide-layered silicate nanocomposite films", *Polymer*. 45 (2004), 7579–7587.