**Xi măng: loại vật liệu phổ biến trong xây dựng**

Xi măng là một loại chất kết dính thủy lực, được dùng làm vật liệu xây dựng. Xi măng được tạo thành bằng cách nghiền mịn clinker, thạch cao thiên nhiên và phụ gia (vỏ sò, đất sét). Khi tiếp xúc với nước thì xảy ra các phản ứng thủy hóa và tạo thành một dạng hồ gọi là hồ xi măng. Tiếp đó, do sự hình thành của các sản phẩm thủy hóa, hồ xi măng bắt đầu quá trình ninh kết sau đó là quá trình hóa cứng để cuối cùng nhận được một dạng vật liệu có cường độ và độ ổn định nhất định.

Để hiểu rõ hơn Cục Thông tin KH&CN quốc gia xin giới thiệu một số bài nghiên cứu đã được xuất bản chính thức và các bài viết được chấp nhận đăng trên những cơ sở dữ liệu học thuật chính thống.



**1. Sciencedirect**

1. Using sulphoaluminate cement and calcium sulfate to modify the physical–chemical properties of Portland cement mortar for mechanized construction
Construction and Building Materials 4 January 2023 Volume 367 (Cover date: 27 February 2023) Article 130252
Chuanchuan Guo, Ru Wang
<https://www.sciencedirect.com/science/article/pii/S0950061822039083/pdfft?md5=43d630a32dbf01c8a8d23e46678d5d66&pid=1-s2.0-S0950061822039083-main.pdf>

2. Comparative study on the performance of photochromic cement, epoxy, and polyester mortars
Journal of Building Engineering 28 March 2023 Volume 70 (Cover date: 1 July 2023) Article 106394
Muhammad Ali Sikandar, Ghulam Mubeen, M. Hamad
<https://www.sciencedirect.com/science/article/pii/S2352710223005739/pdfft?md5=163707c302fbae82575be78705050241&pid=1-s2.0-S2352710223005739-main.pdf>

3. Cementless Compared to Cemented Total Knee Arthroplasty is Associated With More Revisions Within 1 Year of Index Surgery
Arthroplasty Today Available online 10 May 2023 In press, corrected proof Article 101122
Daniel Chiou, Alan K. Li, Christos Demtris Photopoulos
<https://www.sciencedirect.com/science/article/pii/S2352344123000274/pdfft?md5=386945aa14e1fbda7f7c9fd72fe5a0a2&pid=1-s2.0-S2352344123000274-main.pdf>

4. Understanding the role of interfacial transition zone in cement paste and concrete
Materials Today: Proceedings 6 December 2022 Volume 80, Part 2 (Cover date: 2023) Pages 877-881
Kamal Kishore, Radha Tomar
<https://www.sciencedirect.com/science/article/pii/S2214785322071735/pdfft?md5=c47dc8202694f16b6642dc55c127600c&pid=1-s2.0-S2214785322071735-main.pdf>

5. Pore solution alkalinity of cement paste as determined by Cold Water Extraction
CEMENT 10 January 2023 Volume 11 (Cover date: March 2023) Article 100055
Maxime Ranger, Marianne Tange Hasholt, Ricardo Antonio Barbosa
<https://www.sciencedirect.com/science/article/pii/S2666549223000014/pdfft?md5=97948510b7f7dc1f16405a919b7436c9&pid=1-s2.0-S2666549223000014-main.pdf>

6. Carbonation of cement paste under different pressures
Construction and Building Materials 9 February 2023 Volume 370 (Cover date: 17 March 2023) Article 130511
Xianghai Ye, Tingwei Chen, Jiankang Chen
<https://www.sciencedirect.com/science/article/pii/S0950061823002222/pdfft?md5=44b9efa3b5abb99310c8835b3ec7b078&pid=1-s2.0-S0950061823002222-main.pdf>

7. Immobilisation mechanism for nuclear waste containing aluminium by supersulfated cement containing phosphogypsum
Cement and Concrete Composites 23 February 2023 Volume 139 (Cover date: May 2023) Article 104991
Shuhua Liu, Shuo Chang, Shuqiong Luo
<https://www.sciencedirect.com/science/article/pii/S0958946523000653/pdfft?md5=d87acaf8447c689d92f378499fafb3f1&pid=1-s2.0-S0958946523000653-main.pdf>

8. Failure mechanism and influencing factors of cement sheath integrity under alternating pressure
Petroleum Science Available online 8 March 2023 In press, journal pre-proof
Kuan-Hai Deng, Nian-Tao Zhou, Peng-Fei Xie
<https://www.sciencedirect.com/science/article/pii/S1995822623000717/pdfft?md5=d9397ba1b21b1606643b753266b7b731&pid=1-s2.0-S1995822623000717-main.pdf>

9. Effects of different gypsum varieties on the hydration and mechanical properties of red mud-based ferrite-rich sulfoaluminate cement
Journal of Materials Research and Technology 3 April 2023 Volume 24 (Cover date: May–June 2023) Pages 3086-3097
Feihan Jia, Hao Sun, Peng Du
<https://www.sciencedirect.com/science/article/pii/S2238785423006609/pdfft?md5=d4151b57cb5ea909e479d32c5126e243&pid=1-s2.0-S2238785423006609-main.pdf>

10. Deformation mechanisms of cement paste with ultra-low water-to-cement ratios under different curing conditions at early ages
Construction and Building Materials 8 December 2022 Volume 364 (Cover date: 18 January 2023) Article 129951
Fangmei Huang, Zhangli Hu, Jiaping Liu
<https://www.sciencedirect.com/science/article/pii/S0950061822036078/pdfft?md5=2067cdff07d2fa3cef5b13f6ca768c72&pid=1-s2.0-S0950061822036078-main.pdf>

11. Influence of superplasticizers on the workability and mechanical development of binary and ternary blended cement and alkali-activated cement
Construction and Building Materials 3 January 2023 Volume 366 (Cover date: 22 February 2023) Article 130272
María Jimena de Hita, María Criado
<https://www.sciencedirect.com/science/article/pii/S0950061822039289/pdfft?md5=f8b2de430d3ca03dc728641d701b9b7e&pid=1-s2.0-S0950061822039289-main.pdf>

12. Nanopowders as an additive for strength and durability enhancement of cement composite: Review and prospects
Materials Today: Proceedings Available online 4 April 2023 In press, corrected proof
A. Dinesh, S. Yuvaraj, S. Bhanushri
<https://www.sciencedirect.com/science/article/pii/S2214785323017236/pdfft?md5=df8dc4a3affe4c257276384e8621745f&pid=1-s2.0-S2214785323017236-main.pdf>

13. Development of a calcium sulfoaluminate-Portland cement binary system for twin-pipe 3D concrete printing
Cement and Concrete Composites 1 February 2023 Volume 138 (Cover date: April 2023) Article 104960
Yaxin Tao, Manu K. Mohan, Kim Van Tittelboom
<https://www.sciencedirect.com/science/article/pii/S0958946523000343/pdfft?md5=ec162284afe4ae4957d61df9964d33cb&pid=1-s2.0-S0958946523000343-main.pdf>

14. Properties of calcium silicate-based inorganic phosphate cement at room controlled conditions
Journal of Building Engineering 10 December 2022 Volume 64 (Cover date: 1 April 2023) Article 105719
Chinedu A. Ajoku, Anaclet Turatsinze, Ariane Abou-Chakra
<https://www.sciencedirect.com/science/article/pii/S2352710222017259/pdfft?md5=fe6a8ffb701f09b8e84523428971bab8&pid=1-s2.0-S2352710222017259-main.pdf>

15. Matching analysis and experimental study of mechanical properties of cement sheath interface
Journal of Petroleum Science and Engineering 22 October 2022 Volume 220, Part A (Cover date: January 2023) Article 111138
Y. Q. Cheng, S. Q. Liu, H. T. Liu
<https://www.sciencedirect.com/science/article/pii/S0920410522009901/pdfft?md5=fd8a2f173b989354b63b52af6c11c07b&pid=1-s2.0-S0920410522009901-main.pdf>

16. Amphoteric retarder for long-standing cementing: Preparation, properties and working mechanism
Geoenergy Science and Engineering 4 February 2023 Volume 223 (Cover date: April 2023) Article 211524
Wenchuan Wu, Xiaorong Yu, Gaoshen Su
<https://www.sciencedirect.com/science/article/pii/S2949891023001112/pdfft?md5=cf163a55bb3ef380e4ae924aff56d964&pid=1-s2.0-S2949891023001112-main.pdf>

17. Understanding the rheology and hydration behavior of cement paste with nickel slag
Journal of Building Engineering Available online 5 May 2023 In press, journal pre-proof Article 106724
Fanghui Han, Yuchen Li, Dengwu Jiao
<https://www.sciencedirect.com/science/article/pii/S2352710223009038/pdfft?md5=f5ca89d6180e7e0390d9ad25e69291d2&pid=1-s2.0-S2352710223009038-main.pdf>

18. Horizontal cementing displacement flows of shear-thinning fluids, with and without casing rotation
Geoenergy Science and Engineering 6 April 2023 Volume 226 (Cover date: July 2023) Article 211747
A. Renteria, I. A. Frigaard
<https://www.sciencedirect.com/science/article/pii/S2949891023003342/pdfft?md5=7d2a6ed3e30656cc3a3cfc27ec7c2ab1&pid=1-s2.0-S2949891023003342-main.pdf>

19. Techno-economic considerations on cement substitute obtained from waste refining
Journal of Cleaner Production Available online 4 May 2023 In press, journal pre-proof Article 137326
Josef Maroušek, Anna Maroušková, Babak Minofar
<https://www.sciencedirect.com/science/article/pii/S0959652623014841/pdfft?md5=499ca6335be810403c8ba0da9aebe245&pid=1-s2.0-S0959652623014841-main.pdf>

20. Toughness improvement mechanism and evaluation of cement concrete for road pavement: A review
Journal of Road Engineering Available online 22 March 2023 In press, corrected proof
Mingjing FangYiming ChenMengjun Zhu
<https://www.sciencedirect.com/science/article/pii/S2097049823000082/pdfft?md5=f326196b192483ac6e8376ea40601af0&pid=1-s2.0-S2097049823000082-main.pdf>

21. Influence of retarder admixtures on the hydration, rheology, and compressive strength of white Portland cements under different temperatures
CEMENT 1 February 2023 Volume 11 (Cover date: March 2023) Article 100057
Rayara Costa, Thiago Cardoso, Ana Paula Kirchheim
<https://www.sciencedirect.com/science/article/pii/S2666549223000038/pdfft?md5=2acc900ca00b85747ae00aedcde412bc&pid=1-s2.0-S2666549223000038-main.pdf>

22. Initial damage analysis in bone cement-stem debonding procession of cemented hip arthropsty
Materials & Design 14 December 2022 Volume 225 (Cover date: January 2023) Article 111486
Lanfeng Zhang, Hongtao Liu, Feng Yuan
<https://www.sciencedirect.com/science/article/pii/S0264127522011091/pdfft?md5=ec5dc336acab3af3e7cf85626e66acb3&pid=1-s2.0-S0264127522011091-main.pdf>

23. Carbonation and related behaviors of hardened cement pastes under different hydration degrees
Cement and Concrete Composites 5 May 2023 Volume 140 (Cover date: July 2023) Article 105079
Yaowen Xu, Xuhui Liang, Xiaming Feng
<https://www.sciencedirect.com/science/article/pii/S0958946523001531/pdfft?md5=62cf770fd22b85dc71440dfb2f14c0af&pid=1-s2.0-S0958946523001531-main.pdf>

24. Efficient utilization of waste CRT glass in low carbon super-sulfated cement mortar
Cement and Concrete Composites 18 March 2023 Volume 139 (Cover date: May 2023) Article 105037
Jiaxing Ban, Jian-Xin Lu, Chi Sun Poon
<https://www.sciencedirect.com/science/article/pii/S0958946523001117/pdfft?md5=71155536dd55c701ddd20f9aba5ba319&pid=1-s2.0-S0958946523001117-main.pdf>

25. Insights into the acting mechanism of ettringite in expansive Portland cement
Materials Letters 6 May 2023 Volume 345 (Cover date: 15 August 2023) Article 134496
Marcelo Tramontin Souza, Lucas Onghero, Antonio Pedro Novaes de Oliveira
<https://www.sciencedirect.com/science/article/pii/S0167577X2300681X/pdfft?md5=0e2772416f14411a6ae9fa553997993d&pid=1-s2.0-S0167577X2300681X-main.pdf>

26. Sulfoaluminate cement-modified straw biochar as a soil amendment to inhibit Pb-Cd mobility in the soil-romaine lettuce system
Chemosphere8 May 2023Volume 332 (Cover date: August 2023)Article 138891
Feng HanShu-yu AnLiu Yang
<https://www.sciencedirect.com/science/article/pii/S004565352301158X/pdfft?md5=02530c5eed1a34dfc94930f3230ab366&pid=1-s2.0-S004565352301158X-main.pdf>

27. Testing and modeling methods to experiment the flexural performance of cement mortar modified with eggshell powder
Case Studies in Construction Materials 12 December 2022 Volume 18 (Cover date: July 2023) Article e01759
Muhammad Nasir Amin, Waqas Ahmad, Ayaz Ahmad
<https://www.sciencedirect.com/science/article/pii/S2214509522008919/pdfft?md5=543a630ec1aae8bd1bfc057d1cd81080&pid=1-s2.0-S2214509522008919-main.pdf>

28. A review on the fresh properties, mechanical and durability performance of graphene-based cement composites
Materials Today: Proceedings Available online 6 May 2023 In press, corrected proof
Kingshuk Mukherjee, Amgoth Rajender, Amiya K. Samanta
<https://www.sciencedirect.com/science/article/pii/S2214785323024264/pdfft?md5=14bedaef05f43ee5d58a8f0f3395cadd&pid=1-s2.0-S2214785323024264-main.pdf>

29. Alkali-silica reactivity of lightweight aggregates in alkali-activated slag cement and ordinary Portland cement systems
Journal of Cleaner Production 24 January 2023 Volume 390 (Cover date: 1 March 2023) Article 136187
Shuqing Yang, Chi Sun Poon, Hongzhi Cui
<https://www.sciencedirect.com/science/article/pii/S0959652623003451/pdfft?md5=d5de60702695a0291e46e06bcbdd3ff1&pid=1-s2.0-S0959652623003451-main.pdf>

30. Properties of pervious concrete incorporating fly ash as partial replacement of cement: A review
Developments in the Built Environment 9 February 2023 Volume 14 (Cover date: April 2023) Article 100130
Elnaz Khankhaje, Taehoon Kim, Mahdi Rafieizonooz
<https://www.sciencedirect.com/science/article/pii/S2666165923000121/pdfft?md5=5c5644680da4c0f9e6d156560040ad11&pid=1-s2.0-S2666165923000121-main.pdf>

31. Effect of ferrous sulfate replacing gypsum on properties and reducing Cr(VI) of cement paste
Journal of Building Engineering 13 March 2023 Volume 69 (Cover date: 15 June 2023) Article 106295
Yuan Wang, Zhi Wang, Jinghang Niu
<https://www.sciencedirect.com/science/article/pii/S2352710223004746/pdfft?md5=6bba015bc6e29b6906bbde6a447fd98d&pid=1-s2.0-S2352710223004746-main.pdf>

32. Evaluation of hematite and Micromax-based cement systems for high- density well cementing
Journal of Petroleum Science and Engineering 14 October 2022 Volume 220, Part B (Cover date: January 2023) Article 111125
Abdulmalek Ahmed, Ahmed Abdelaal, Salaheldin Elkatatny
<https://www.sciencedirect.com/science/article/pii/S0920410522009779/pdfft?md5=4fc0420544316dd500dec5a17f5aa3ff&pid=1-s2.0-S0920410522009779-main.pdf>

33. Application of natural fibres in cement concrete: A critical review
Materials Today Communications 17 March 2023 Volume 35 (Cover date: June 2023) Article 105833
Hussein M. Hamada, Jinyan Shi, Gökhan Kaplan
<https://www.sciencedirect.com/science/article/pii/S235249282300524X/pdfft?md5=f35c802167f3381c94bc06146f388a2b&pid=1-s2.0-S235249282300524X-main.pdf>

34. Hydration, mechanical performance and porosity of Portland cement pastes with functionalized nanosilica with APTES
Developments in the Built Environment 5 April 2023 Volume 14 (Cover date: April 2023) Article 100157
Julliana Simas Vasconcellos, Yuri Sotero Bomfim Fraga, Moisés Frías Rojas
<https://www.sciencedirect.com/science/article/pii/S266616592300039X/pdfft?md5=f9e914da02df1437ef70570be1373a40&pid=1-s2.0-S266616592300039X-main.pdf>

35. Accelerated curing of cement mortar: In-situ carbonation utilising CO2-impregnated faujasite
Construction and Building Materials 11 May 2023 Volume 388 (Cover date: 24 July 2023) Article 131639
Wenjie Luo, Bo Li, Kien-Woh Kow
<https://www.sciencedirect.com/science/article/pii/S0950061823013521/pdfft?md5=74d39b0c94a58b39047f9d2a05871ae4&pid=1-s2.0-S0950061823013521-main.pdf>

36. Can Selected Use of Cemented and Uncemented Femoral Components in a Broad Population Produce Comparable Results Following Primary Total Hip Arthroplasty for Osteoarthritis?
The Journal of Arthroplasty Available online 10 April 2023In press, corrected proof
Jacob M. Wilson, Anne A. Smartt, Rafael J. Sierra
<https://www.sciencedirect.com/science/article/pii/S0883540323003479/pdfft?md5=47f04b3556774ee8e5d262aab23bfcb7&pid=1-s2.0-S0883540323003479-main.pdf>

37. Miniature pH detection probe for in-situ monitoring of cement paste inside
Electrochimica Acta 27 December 2022 Volume 441 (Cover date: 10 February 2023) Article 141776
Koji Fushimi, Tomoya Takano, Masatoshi Sakairi
<https://www.sciencedirect.com/science/article/pii/S0013468622019326/pdfft?md5=79ffe2c3cec871a07f04c717868041f0&pid=1-s2.0-S0013468622019326-main.pdf>

38. Investigation of water stability and microcharacteristics of magnesium potassium phosphate cement modified by calcium aluminate cement and wollastonite
Construction and Building Materials 2 February 2023 Volume 369 (Cover date: 10 March 2023) Article 130580
Liang Bai, Hui Zheng, Shuai Hu
<https://www.sciencedirect.com/science/article/pii/S095006182300291X/pdfft?md5=bee3bb623e6887553f5e79daf554b9c5&pid=1-s2.0-S095006182300291X-main.pdf>

39. Recycled cement production energy consumption optimization
Sustainable Chemistry and Pharmacy 25 January 2023 Volume 32 (Cover date: May 2023) Article 101010
Vitor Sousa, José Alexandre Bogas, Ana Carriço
<https://www.sciencedirect.com/science/article/pii/S235255412300044X/pdfft?md5=2b14d1a08953f0b320509e6b8951089b&pid=1-s2.0-S235255412300044X-main.pdf>

40. Cement pastes in tertiary colours: A digital approach for colouration of cement-based materials
Construction and Building Materials 13 April 2023 Volume 382 (Cover date: 13 June 2023) Article 131354
Hong Huang, Rui Long, Hao Zhou
<https://www.sciencedirect.com/science/article/pii/S095006182301067X/pdfft?md5=90e91409b8d871cb867e7c68bfc50980&pid=1-s2.0-S095006182301067X-main.pdf>

41. Crack evolution characteristics of cemented-gangue–fly-ash backfill with different proportions of fly ash and cement
Construction and Building Materials 28 April 2023 Volume 385 (Cover date: 3 July 2023) Article 131498
Guorui Feng, Wenhao Liu, Yuanxiang Zheng
<https://www.sciencedirect.com/science/article/pii/S0950061823012114/pdfft?md5=805121aa7ae5f535e50491b0c469cc48&pid=1-s2.0-S0950061823012114-main.pdf>

42. Effect of ultra-fine limestone powder on leaching resistance of cement mortar
Construction and Building Materials 30 January 2023 Volume 368 (Cover date: 3 March 2023) Article 130422
Hong-liu Rong, Ze-hua Zhou, Yu-meng Feng
<https://www.sciencedirect.com/science/article/pii/S0950061823001332/pdfft?md5=6adbf1163f8b345181771f0e1312442b&pid=1-s2.0-S0950061823001332-main.pdf>

43. Gridded cemented riprap for scour protection around monopile in the marine environment
Ocean Engineering 8 February 2023 Volume 272 (Cover date: 15 March 2023) Article 113876
Wei Wang, Junyi Yan, Baizhi Wang
<https://www.sciencedirect.com/science/article/pii/S0029801823002603/pdfft?md5=d46de0b310628643cd7e986b7029e673&pid=1-s2.0-S0029801823002603-main.pdf>

44. Cement mortar containing crumb rubber coated with geopolymer: From microstructural properties to compressive strength
Construction and Building Materials 13 April 2023 Volume 383 (Cover date: 20 June 2023) Article 131284
Junli Liu, Phuong Tran
<https://www.sciencedirect.com/science/article/pii/S0950061823009972/pdfft?md5=15a6f8069d322d9a6fa19218ca84c40f&pid=1-s2.0-S0950061823009972-main.pdf>

45. Effect of nano SiO2 on the properties of composite cements
Materials Today: Proceedings Available online 3 May 2023 In press, corrected proof
Raju Goyal, Vinay K. Verma, N. B. Singh
<https://www.sciencedirect.com/science/article/pii/S2214785323023143/pdfft?md5=727100ab249c10ea30a4957528a967da&pid=1-s2.0-S2214785323023143-main.pdf>

46. Mechanical properties and nonlinear deformation description model of cement stone
Geoenergy Science and Engineering 18 February 2023 Volume 223 (Cover date: April 2023) Article 211578
Jian Liu, Xuning Wu, Rui Chen
<https://www.sciencedirect.com/science/article/pii/S2949891023001653/pdfft?md5=8f416901d175d8744a2d29dec92e4e7a&pid=1-s2.0-S2949891023001653-main.pdf>

47. Feasibility study on utilization of copper tailings as raw meal and addition for low carbon Portland cement production
Construction and Building Materials 7 April 2023 Volume 382 (Cover date: 13 June 2023) Article 131275
Yong Cheng, Ruifeng Qi, Qingsong Huang
<https://www.sciencedirect.com/science/article/pii/S0950061823009881/pdfft?md5=f8f8e92a255283e002ddd62350a31dc5&pid=1-s2.0-S0950061823009881-main.pdf>

48. Experimental study on chloride corrosion resistance of sulphoaluminate cement modified by acrylamide in situ polymerization
Journal of Building Engineering Available online 2 May 2023 In press, journal pre-proof Article 106730
Hucheng Chai, Haibo Zhang, Songhui Liu
<https://www.sciencedirect.com/science/article/pii/S2352710223009099/pdfft?md5=a650043c7c30778b4d824ea4a03f0d73&pid=1-s2.0-S2352710223009099-main.pdf>

49. Utilization of coal gangue power generation industry by-product CFA in cement: Workability, rheological behavior and microstructure of blended cement paste
Fuel 3 April 2023 Volume 345 (Cover date: 1 August 2023) Article 128185
Jihui Zhao, Qiang Liu, Dongmin Wang
<https://www.sciencedirect.com/science/article/pii/S0016236123007986/pdfft?md5=9d87a3436e5152cb143493797eacb106&pid=1-s2.0-S0016236123007986-main.pdf>

    Nguồn: Cục Thông tin khoa học và công nghệ quốc gia