

Ain Shams University  
Faculty of Science  
Chemistry Department



# **Effect of Some Chemical Additives on the Physico-Chemical Properties of Oil Well Cement Pastes**

**A Thesis**

**Submitted to Chemistry Department – Faculty of Science –  
Ain Shams University in Partial Fulfillment for Requirements  
of the Master Degree of Science (M.Sc.) in Chemistry**

**By**

**Alaa Mohsen Abd El-Aziz**

**B.Sc. in Applied Chemistry, Faculty of Science  
Ain Shams University, 2009**

**Under Supervision of**

***Dr. Teraze Albert Youssef***

**Associate Prof. of Inorganic Chemistry  
Chemistry Department, Faculty of Science,  
Ain Shams University**

***Prof. Dr. Ismail Abd El-Rahman Aiad***

**Prof. of Petrochemicals  
Head of Petrochemical Department, Egyptian Petroleum  
Research Institute (EPRI)**

***Dr. Amr Osman Mohamed Habib***

**Assistant Prof. of Physical Chemistry  
Engineering Physics and Mathematics Department, Faculty of  
Engineering, Ain Shams University**

**2015**

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## **Approval Sheet**

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**This thesis for Master degree has been approved by:**

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**Chemistry Department, Faculty of Science, Ain Shams University**

***Prof. Dr. Ismail Abd El-Rahman Aiad***

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**Head of Petrochemical Department, Egyptian Petroleum**

**Research Institute (EPRI).**

***Dr. Amr Osman Mohamed Habib***

**Assistant Prof. of Physical Chemistry**

**Engineering Physics and Mathematics Department, Faculty  
of Engineering, Ain Shams University**

**Head of Chemistry Department**

**Prof. Dr. Hamed Ahmed Younes Derbala**



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**Thesis Approved**

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*Prof. Dr. Ismail Abd El-Rahaman Aiad*

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*Dr. Amr Osman Mohamed Habib*

... ..

**Head of Chemistry Department  
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## ACKNOWLEDGMENT

*First and last thanks to Allah who give me the power to go forward in a way illuminated with his merciful guidance.*

*I would like to express my thanks to **Prof. Dr. Ismail Abd El-Rahman Aiad**, Professor of Petrochemical, Head of Petrochemical Department, Egyptian petroleum Research Institute, for giving me the chance to be one of his students and for his generous advices, valuable discussions.*

*I am deeply indebted to **Dr. Amr Osman Mohamed Habib**, Assistant Professor of Physical Chemistry, Engineering Physics and Mathematics Department, Faculty of Engineering, Ain Shams University who helped me greatly, gave me useful guidance, effective contributions, and the confidence to express my ideas freely.*

*Also I'd like to thank **Dr. Teraze Albert Youssef**, Associate Professor of Inorganic chemistry, Faculty of Science, Ain Shams University for her efforts & co-operation.*

*Also I would like to thank all members of the Chemistry Department, Faculty of Engineering, Ain Shams University for their great efforts,*

Also I would like to thank **Prof. Dr. S. A. Abo-El-Enein (D.Sc.)** Prof. of Physical Chemistry and Building Materials, Faculty of Science, Ain Shams University and **Dr. Mohamed S. Amin**, Associate Prof. of Physical Chemistry, Faculty of Science, Ain Shams University for providing the different facilities to carry out the Experiments.

Finally, I wish to thank my family and my friend **Eng. Ahmed Abd Elhamid** who helping me during conducting this work.

TO  
THE SOUL OF MY FATHER

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا

إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ

الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة - الآية (32)

**Ain Shams University**  
**Faculty of Science**  
**Chemistry Department**



**Student Name: Alaa Mohsen Abd El-Aziz Ahmed**

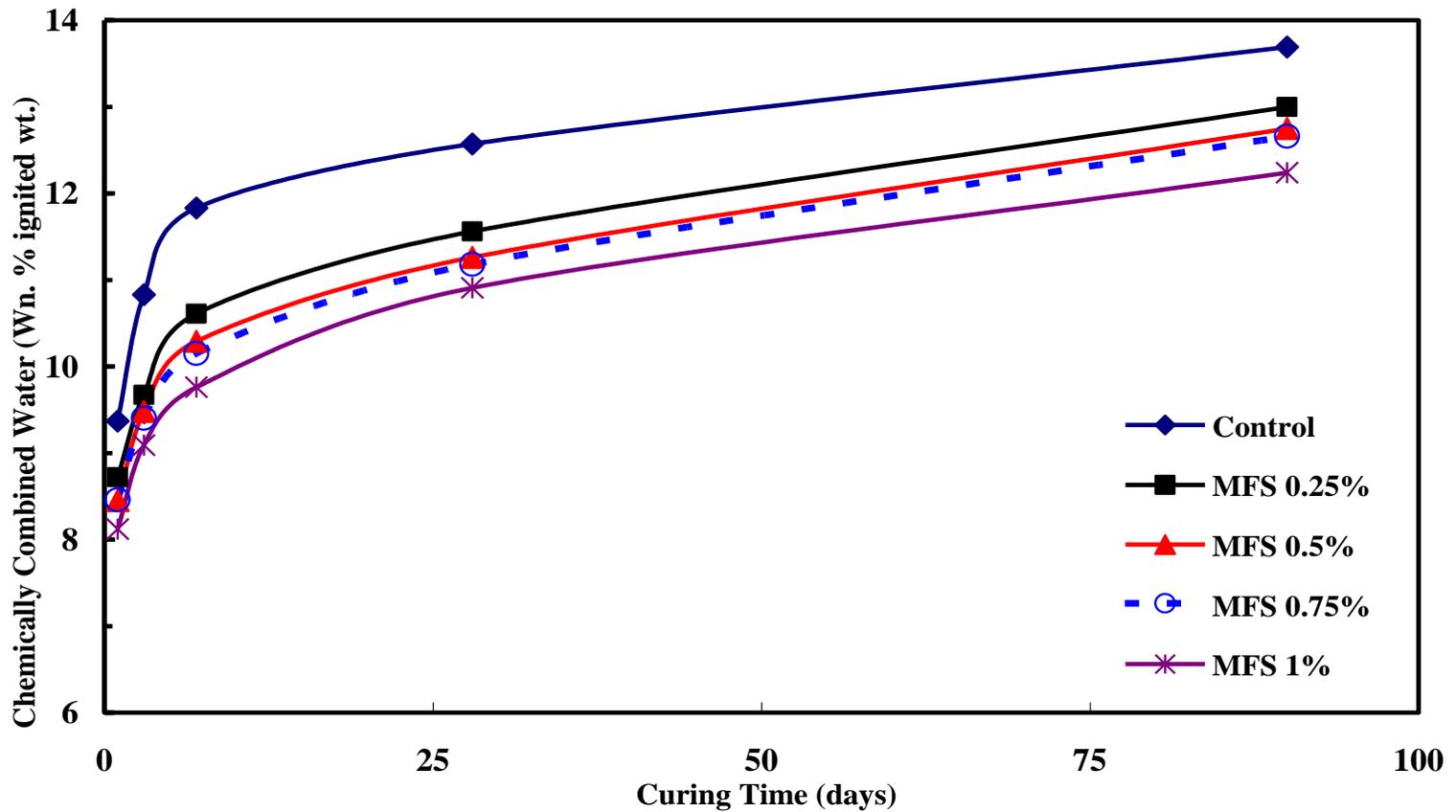
**Scientific Degree: M.Sc.**

**Faculty Name: Faculty of Science – Ain Shams University**

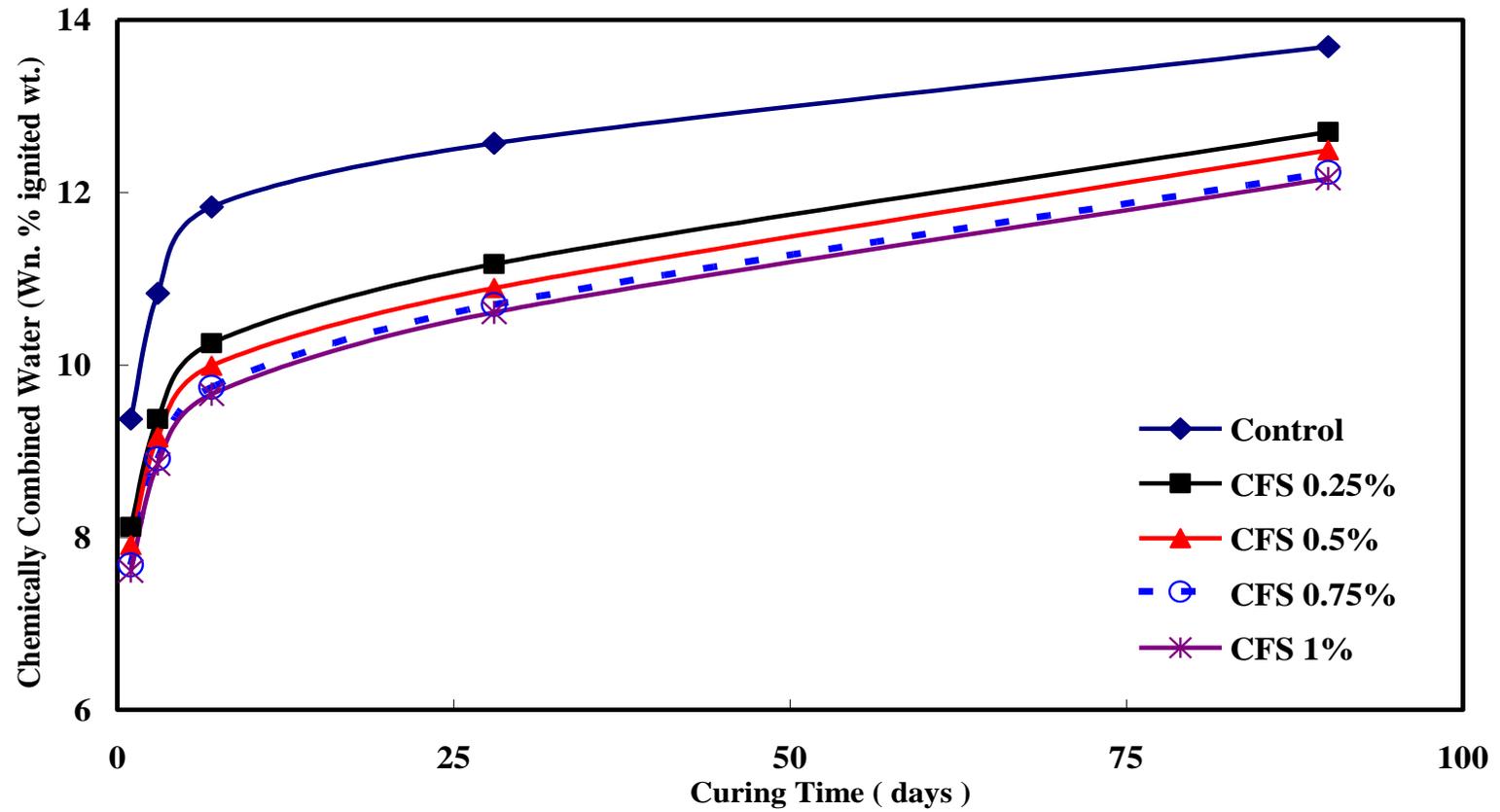
**Graduation Year: 2009**

**Granting Year:**

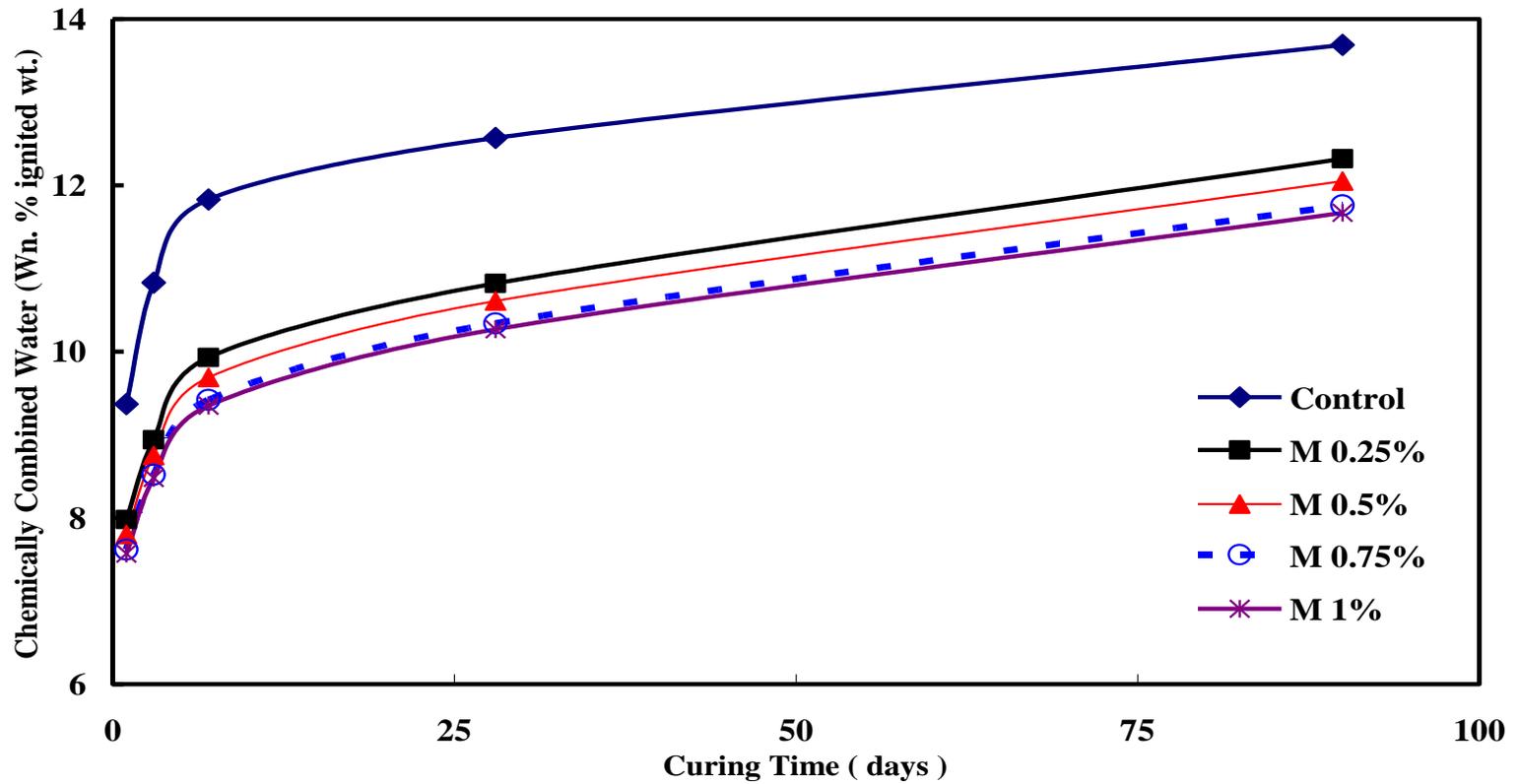
**Head of Chemistry Department**  
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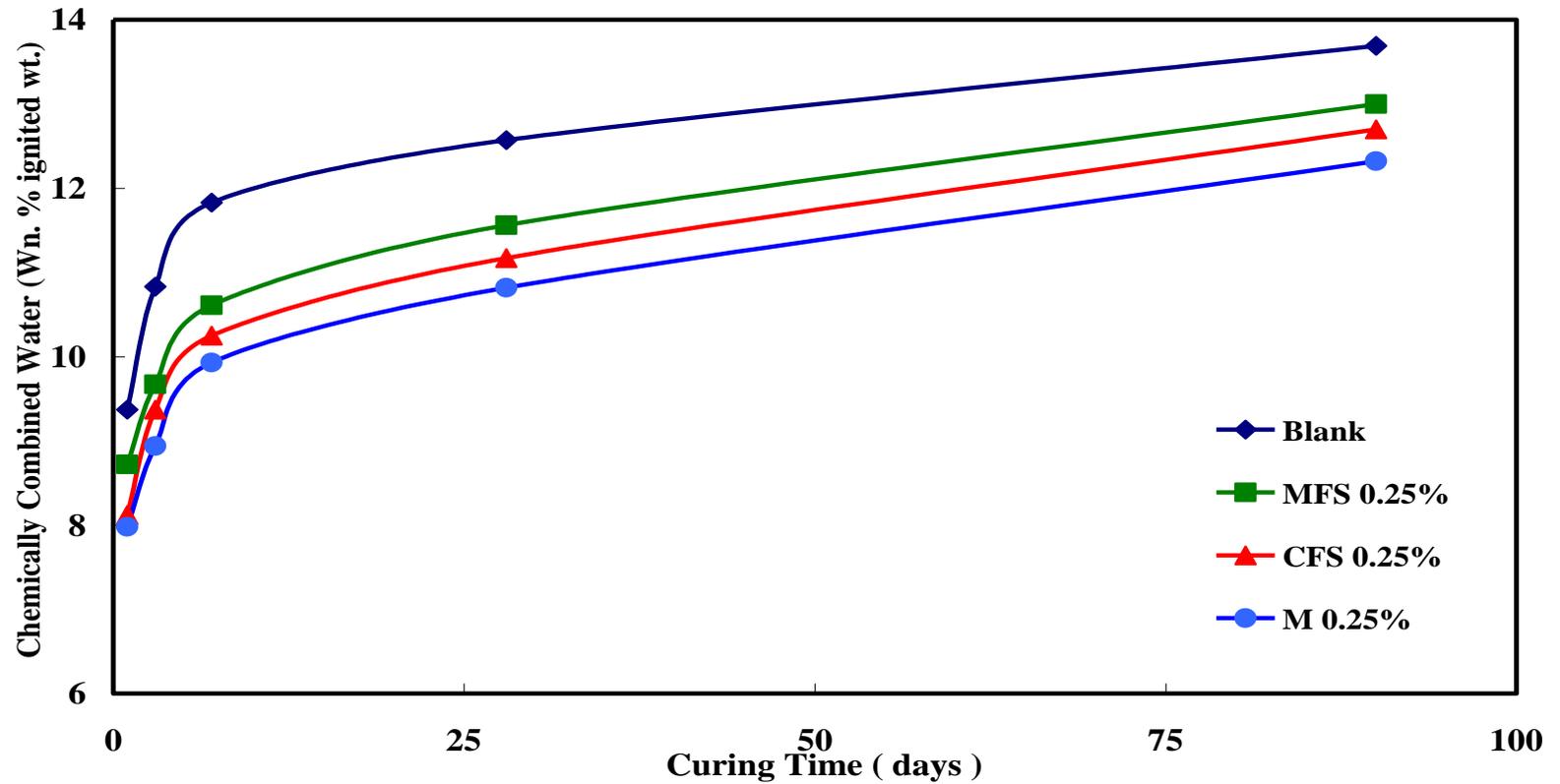
**Fig. 11: Variation of the chemically combined water content of the hardened cement pastes made with different dosages of MFS versus Curing Time**



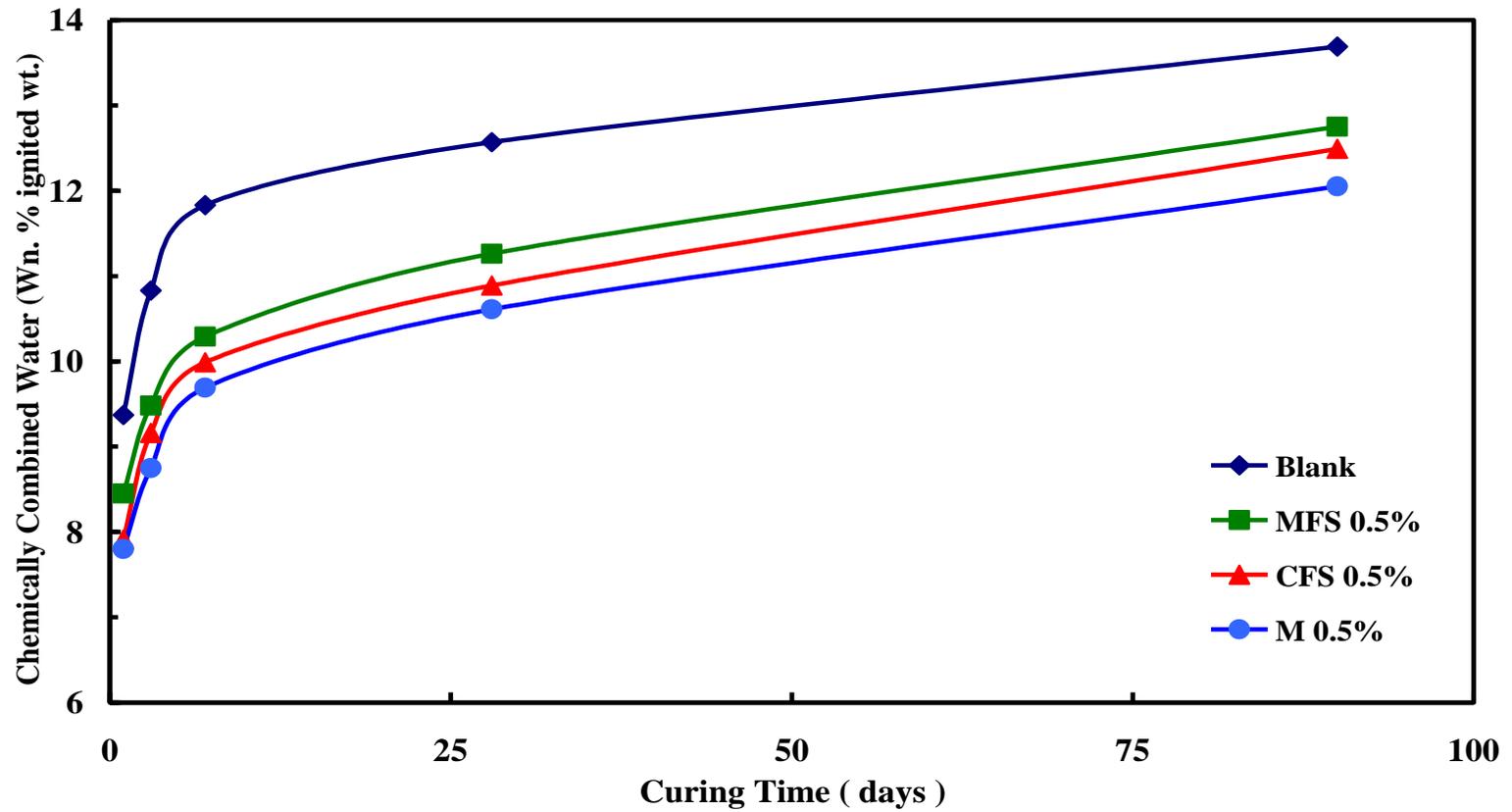
**Fig. 12: Variation of the chemically combined water content of the hardened cement pastes made with different dosages of CFS versus Curing Time**



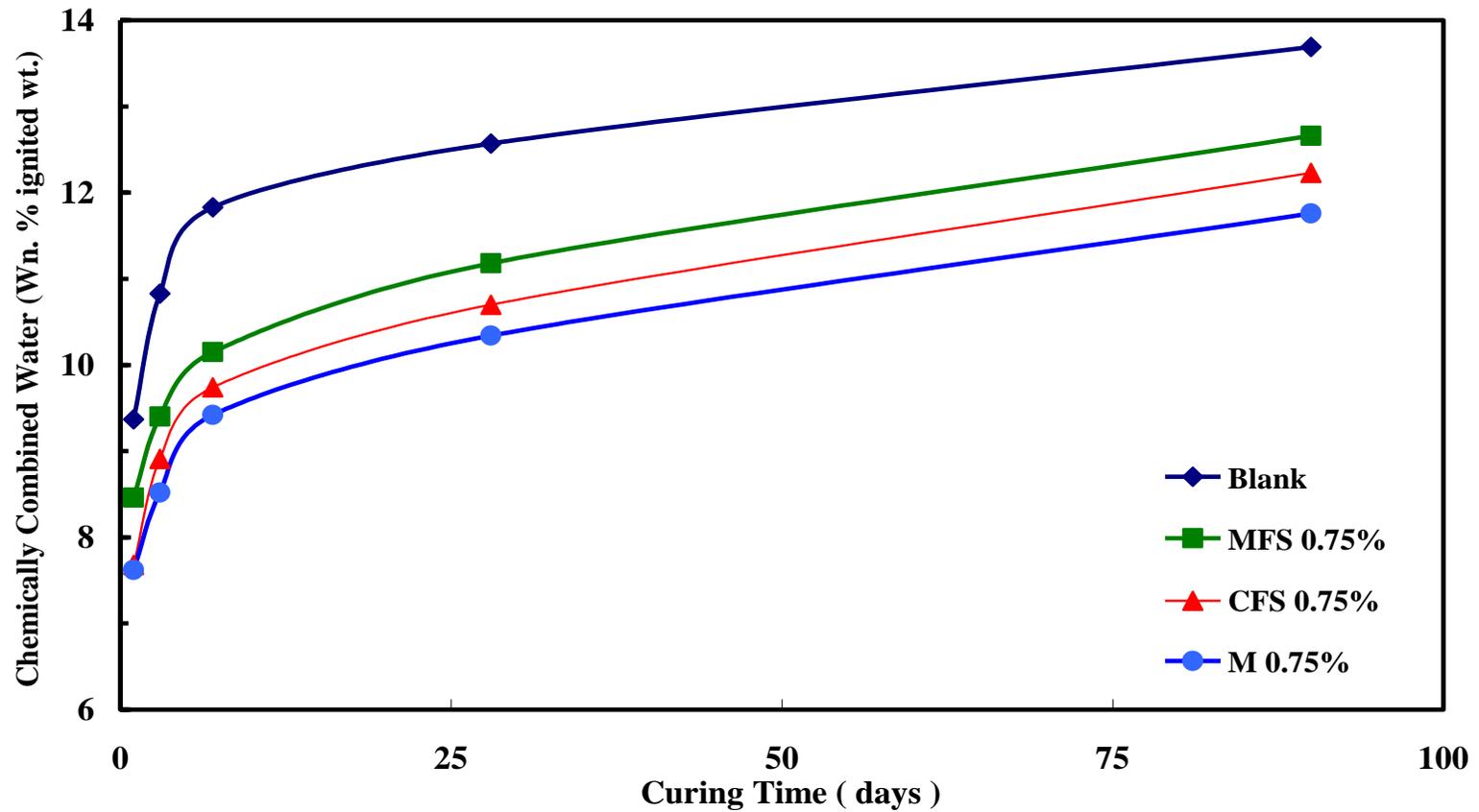
**Fig.13: Variation of the chemically combined water content of the hardened cement pastes made with different dosages of M versus Curing Time**



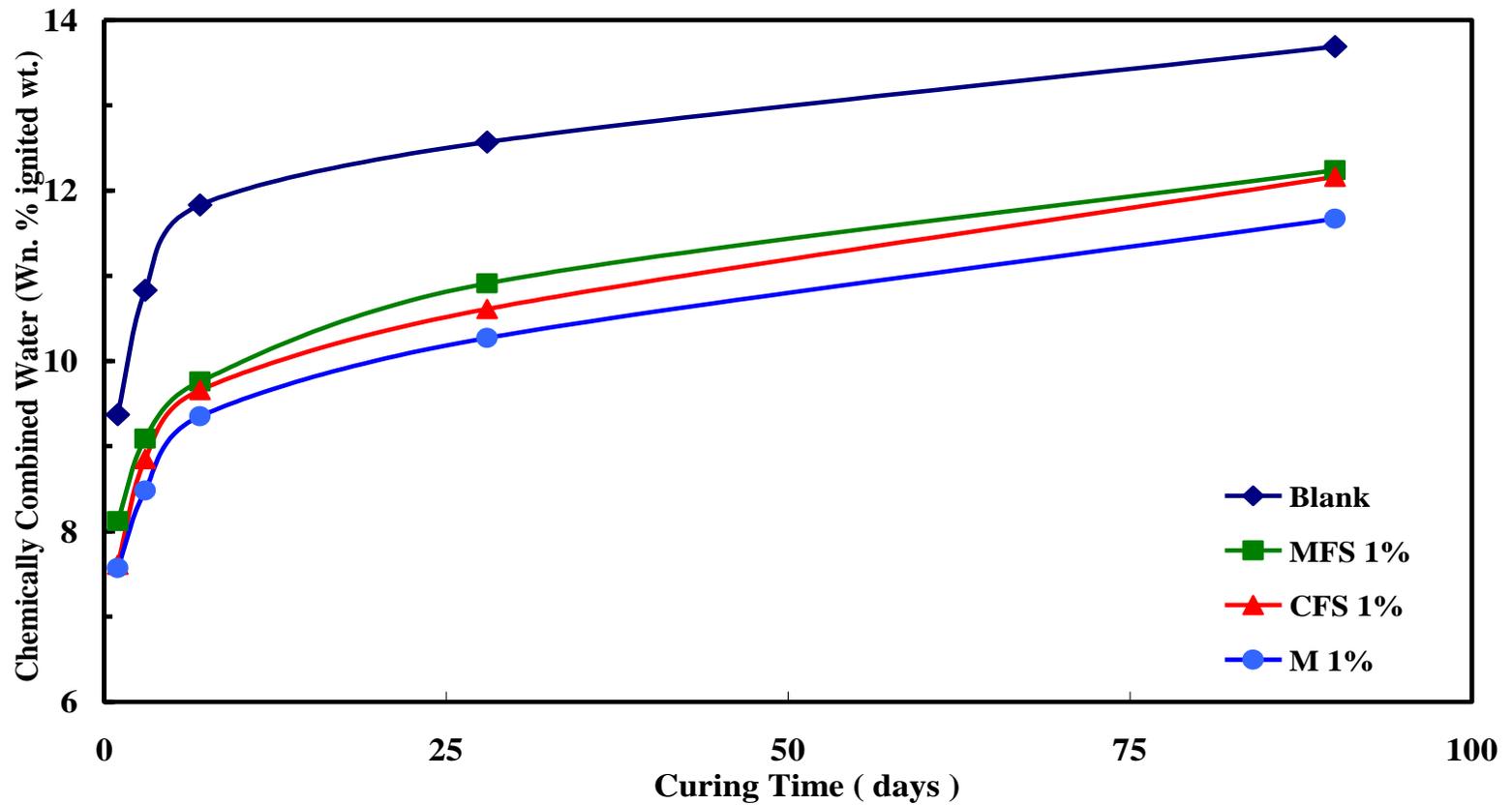
**Fig. 14: Effect of the same dose (0.25%) of the different admixtures as well as Control on chemically combined water content of the hardened cement pastes at various ages of hydration**



**Fig. 15: Effect of the same dose (0.5%) of the different admixtures as well as Control on chemically combined water content of the hardened cement pastes at various ages of hydration**



**Fig. 16: Effect of the same dose (0.75%) of the different admixtures as well as Control on chemically combined water content of the hardened cement pastes at various ages of hydration**



**Fig. 17: Effect of the same dose (1.00%) of the different admixtures as well as Control on chemically combined water content of the hardened cement pastes at various ages of hydration**