



ICMH 2012
30 - 31 May 2012
Iran, Isfahan

Abstract Book

3rd International Conference on Materials Heat Treatment ICMH 2012

- Fundamental of Materials Heat Treatment (Theory/Experiments/Simulation).
- Heat Treatment and Surface Engineering.
- Heat Treatment and Welding.
- Heat Treatment Application.
- Heat Treatment and Nano Technology.
- Potentials and Problems of Heat Treatment.
- Heat Treatment of Metallic and Non-Metallic Materials.

ICMH
2012

Conference web site
<http://www.icmh.ir>
info@icmh.ir

Editor : Dr. Morteza Zand Rahimi

ICMH 2012

3rd International Conference on Materials Heat Treatment ICMH 2012

ICMH focuses on real world applications; therefore authors should highlight the benefits of Heat Treatment for industry and services. Ideas on how to solve problems, using Material science, will arise from the conference. Papers describing advanced prototypes, systems, tools and techniques and general survey papers indicating future directions are also encouraged. Papers describing original work are invited in any of the areas listed below. Accepted papers, presented at the conference by one of the authors, will be published in the Proceedings of ICMH. Acceptance will be based on quality, relevance and originality. Both full research reports and work-in-progress reports are welcome. There will be both oral and poster sessions.

<http://www.icmh.ir>
info@icmh.ir





In the Name of God



certificate ...

Islamic Azad University
Majlesi Branch
Isfahan, Iran

This is to certify that

M. Muhammadpour A.R. Kiani-Rashid E. Mohammadi

Presented paper No. 1030614 Entitled

Phase transformation of carbide in ultrahigh-carbon steel

In ICMH 2012 -May 30-31st, 2012

Hotel Abbasi, Isfahan, Iran.

M. Gheisarian

Chancellor, Majlesi Branch
Islamic Azad University
Isfahan, Iran

M. H. Gheisarian

Dr. Zandrahimi

Conference Scientific Chairman
Shahid Bahonar University
Kerman, Iran

M. Zandrahimi



International Conference on
Materials Heat Treatment
ICMH 2012

Isfahan, Iran, May 30-31
Abbasi Hotel



Phase transformation of carbide in ultrahigh-carbon steel

M. Muhammadpour(1)A.R. Kiani-Rashid(2)E. Mohammadi(3)

mahdi.muhammadpour@gmail.com

Abstract :

An ultrahigh-carbon steel (UHCS) containing 2.035 wt.% carbon and 10 wt.% chromium was processed to obtain ultrafine spheroidized carbide, pearlite and ferrite structure, respectively. The microstructure of this steels were investigated by light microscopy. The Phase transformation and phase transition of carbide were discussed and investigated. The present results indicate that ultrahigh-carbon steels can be easily processed to achieve unique microstructures and properties.

Keywords : UHCS; Spheroidized carbide; phase transformation; phase transition

1-3- M.Sc. on Materials engineering, Materials engineering group, Engineering department, Ferdowsi university of Mashhad, Mashhad, Iran

2- Associated professor on Materials engineering, Materials engineering group, Engineering department, Ferdowsi university of Mashhad, Mashhad, Iran



International Conference on Materials Heat Treatment (ICMH 2012)

Islamic Azad University, Majlesi Branch, May 10-12, 2012

Isfahan, Iran

Phase transformation of carbide in ultrahigh-carbon steel

M. Muhammadpour¹, A.R. Kiani-Rashid², E. Mohammadi¹

*Materials engineering group, Engineering department,
Ferdowsi university of Mashhad, Mashhad, Iran*

Corresponding Author E-mail: mahdi.muhammadpour@gmail.com

1. ABSTRACT

An ultrahigh-carbon steel (UHCS) containing 2.035 wt.% carbon and 10 wt.% chromium was processed to obtain ultrafine spheroidized carbide, pearlite and ferrite structure, respectively. The microstructure of these steels was investigated by light microscopy. The phase transformation and phase transition of carbide were discussed and investigated. The present results indicate that ultrahigh-carbon steels can be easily processed to achieve unique microstructures and properties.

Keywords: UHCS; Spheroidized carbide; phase transformation; phase transition

¹ M.Sc. on Materials engineering

² Associated professor on Materials engineering