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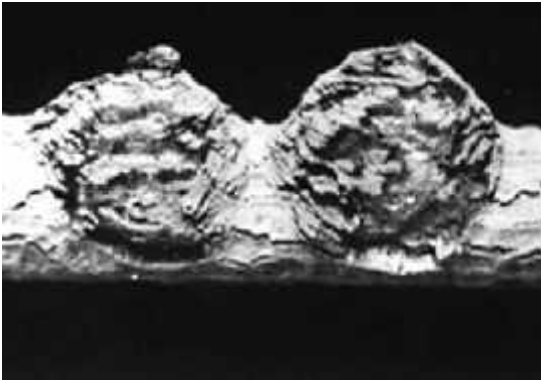
1200 – 2000 °C

Structural silicides and functional molybdenum silicide coatings are an alternative materials system to super alloy, intermetallics and ceramics for potential structural application in the range 1200 – 2000 °C under oxidizing and aggressive condition. Central aspects for the development of silicides are improvements in both high and low temperature mechanical properties, with retention of oxidation resistance. The processes of the temperature stimulated growth of the silicide coatings were investigated. The relationship of these processes to the heterogeneous reactions of Mo-Si system is established. Using the results of this study carried out a series of practical approaches is proposed to process of the formation of the silicide coatings.

[1, 2].

[3, 4].





. 1.

-2, 4.

54,4 / [5].

$$D_{MoSi_2} = 0,8 \exp(-28800/T) \cdot 10^{4,2} / - \quad (1)$$

[6, 7],

$$\bar{D} = 0,63D_{Si} + 0,37D_{Mo} \quad (2)$$

1.

1

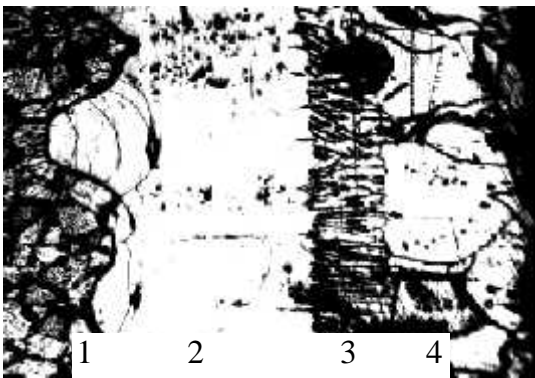
T, °C	1100	1200	1400	1500	1700	1800	1900	2000
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D 10 <sup>-6</sup> , 2/	6,2	117	260	700	3600	7400	14000	25000
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, 1100 1800 ° -  
 1000 ,  
 40 2.

2

T, °C	1100	1200	1300	1400	1500	1700	1800	1900	2000
h · 10 <sup>-6</sup> ,	86	117	328	561	920	2088	2993	4117	5500

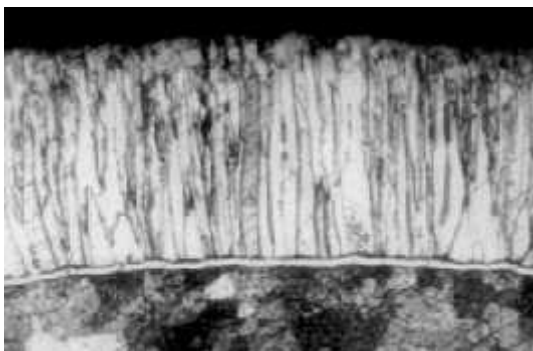


50

. 2.

- 1 -
- 2 - Mo<sub>5</sub>Si<sub>3</sub>,
- 3 - ( . 2).
- MoSi<sub>2</sub> - Mo<sub>5</sub>Si<sub>3</sub>,
- 4 - ; -8.

1800 - 2000 ° .



200

. 3.

Mo<sub>5</sub>Si<sub>3</sub> (1)

Mo<sub>5</sub>Si<sub>3</sub>

( . 3).

Mo<sub>5</sub>Si<sub>3</sub>



- 1.
- 2.
- 3.
- 4.
- 5.

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