

## عنوان مقاله:

Experiment on Erosion Wear Characteristic of NiWC<sub>3</sub> Coating and Sintered WC under High-Speed Impacting of Solid Particle

## محل انتشار:

دوماهنامه مکانیک سیالات کاربردی، دوره 14، شماره 4 (سال: 1400)

تعداد صفحات اصل مقاله: 12

## نویسندگان:

C. Wang - Faculty of Mechanical Engineering & Automation, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

A. Q. Duan - Faculty of Mechanical Engineering & Automation, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

K. N. Bie - Faculty of Mechanical Engineering & Automation, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

X. F. Liu - Faculty of Mechanical Engineering & Automation, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

H. Z. Jin - Faculty of Mechanical Engineering & Automation, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, 310018, China

G. F. Ou - School of Mechanical Engineering & Rail Transit, Changzhou University, Changzhou, Jiangsu, 213000, China

## خلاصه مقاله:

Erosion wear caused by solid particles is a big challenge in the oil and gas industry, which seriously threatens the long-term safe operation of the equipment. A novel experimental apparatus was set up to meet the requirements for accelerating erosion wear research process for abrasion resistant materials, with a capability of producing high speed particles to impact target specimen. The erosion wear experiments of NiWC<sub>3</sub> coating and sintered WC were conducted under different amounts of abrasive, temperatures, and impact angles respectively. Their macroscopic and microscopic erosion damage morphology and mechanism were discussed and analyzed. The results show that the amount of abrasive, temperature and impact angle have a more significant effect on the erosion wear of NiWC<sub>3</sub> coating than sintered WC. The erosion rate of NiWC<sub>3</sub> coating increases approximately linearly with the increase of the amount of abrasive; the impact angle of the NiWC<sub>3</sub> coating is smaller, the range of erosion pit is wider; while the erosion wear morphology and erosion rate of sintered WC basically unchanged under different variables, countless fine irregular particles in the microscopic surface is the key to excellent abrasion resistance of sintered WC.

## کلمات کلیدی:

Erosion wear experiment, NiWC<sub>3</sub> coating, Sintered WC, Abrasion resistance, Impact morphology

## لینک ثابت مقاله در پایگاه سیویلیکا:

