بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

EFFECT OF ALUMINUM, TUNGESTEN AND COBALT ADDITION ON THE PROPERTIES OF SINTERED IRON BASED POWDER

By

Reham Salah Abd EL-Salam Soliman

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of

MASTER OF SCIENCE
In
Mechanical Design and Production Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

EFFECT OF ALUMINUM , TUNGESTEN AND COBALT ADDITION ON THE PROPERTIES OF SINTERED IRON BASED POWDER

Key Words:

Iron composites; Tribological properties; Friction rate, Wear rate

Summary:

The aim of this work is to study the effect of aluminum, Tungsten and cobalt on the mechanical properties of iron based composites. Five samples were prepared by milling for 20 h followed by cold pressing then sintering at temperatures range from 1000 to 1250 °C. The samples were characterized using density measurements, SEM, Wear test and friction coefficient measurements. Sample five (5%W, 4% AL and 1% CO) showed the highest wear resistance, largest hardness, fine grain size and the lowest friction coefficient compared with other samples which recommend this sample to be a good candidate for applications require high wear resistance and moderate friction coefficient.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Date:../../…

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Reham salah

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