



Special Issue Reprint

Tribological Performance of Artificial Joints

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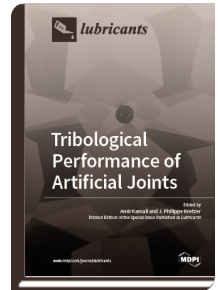
Amir Kamali

J. Philippe Kretzer

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Joint replacement is a very successful medical treatment. However, the survivorship of the implants could be adversely affected due to the loss of materials in the form of particles or ions as the bearing surfaces articulate against each other. The consequent tissue and immune response to the wear products, remain one of the key factors of their failure.

Tribology has been defined as the science and technology of interacting surfaces in relative motion and all related wear products (e.g., particles, ions, *etc.*).

Over the last few decades, in an attempt to understand and improve joint replacement technology, the tribological performance of several material combinations have been studied experimentally and assessed clinically. In addition, research has focused on the biological effects and long term consequences of wear products.

Improvements have been made in manufacturing processes, precision engineering capabilities, device designs and materials properties in order to minimize wear and friction and maximize component longevity *in vivo*.

This book investigates the *in vivo* and *in vitro* performance of the orthopaedic implants and their advanced bearings. Contributions are solicited from the researchers working in the field of biotribology and bioengineering



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