# Article information:

Miniaturized Magnetic Sensors for Implantable Magnetomyography - Zuo - 2020 - Advanced Materials Technologies - Wiley Online Library  
<https://onlinelibrary.wiley.com/doi/full/10.1002/admt.202000185>

# Article summary:

1. Magnetomyography (MMG) is the measurement and study of the magnetic manifestation of muscle activity, which has been slow to progress due to technical constraints in measuring magnetic fields from skeletal muscles.

2. MMG sensors have the potential to address shortcomings of noninvasive electromyography (EMG) measurements, such as poor spatial resolution and limited biocompatibility of implantable sensors.

3. MMG signals have potential applications in medical diagnosis, rehabilitation, health monitoring, and robotics control, but are much smaller than EMG signals and require highly sensitive biomagnetic sensors.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

该文章主要介绍了磁肌图技术的发展和应用前景，但存在一些偏见和不足之处。

首先，文章认为由于皮肤上非侵入式记录的 EMG 信号空间分辨率差，因此 MMG 技术具有优势。然而，这种观点忽略了现代 EMG 技术已经可以使用微型电极阵列实现高空间分辨率记录。其次，文章未能充分探讨 MMG 技术的局限性和挑战，例如环境磁场干扰、信噪比低等问题。

此外，文章提到 MMG 技术可以用于孕期健康监测和运动障碍诊断与康复等领域。然而，在介绍这些应用时，文章没有提及可能存在的风险和限制条件。例如，在孕期监测中可能会对胎儿产生影响，并且在某些情况下需要进行手术植入传感器。

最后，该文章缺乏平衡报道双方观点的内容。虽然作者提到了 EMG 和 MMG 两种技术的异同之处，但是没有探讨它们各自的优缺点以及如何选择合适的技术来解决特定问题。

综上所述，该文章存在一些偏见和不足之处，需要更加客观全面地介绍 MMG 技术的发展和应用前景。

# Topics for further research:

* High spatial resolution EMG technology
* Limitations and challenges of MMG technology
* Risks and limitations of MMG technology in pregnancy monitoring
* Implantation of sensors for MMG technology
* Comparison of advantages and disadvantages between EMG and MMG technologies
* Need for a more balanced and comprehensive discussion of MMG technology development and applications.

# Report location:

<https://www.fullpicture.app/item/8adbf1abf42c53d92c0610b3bc7963c1>