

Marketing Abstract of NTU's Invention Disclosure

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Title	Physical Vigor Feedback Apparatus
Inventor (s)	Lu, Tung-Wu
Brief Description	<p style="text-align: center;">(≤ 100 words of non-confidential information)</p> <p>This apparatus uses any two of the user's torsion, limb angle or force data detected by sensors to obtain the user's physical vigor. The obtained physical vigor can then be feed-backed to adjust automatically the seat position, speed or assistive power-supply to match the user's physical vigor and posture, and to decrease the energy consumption and potential sport injuries.</p>
Fields of Application	<p>This apparatus can be applied to pedaling equipments, such as bicycles, exercise bikes, and stepping machines et al., for real time measurement of the user's physical vigor. The user's physical vigor data are then feed-backed to the system to achieve specific movement strength and endurance, and to decrease the energy consumption and sport injuries.</p>
Advantages	<p>(when compared to the existing technologies)</p> <p>When riding a bike or using an exercise bike, user's physical vigor and posture change with time. The initial setting of the bike is not suitable for use after a long period. Existing devices can not immediately adjust the setting of the bike in accordance with the user's physical condition. This situation makes it difficult for users in achieving specific movement strength and endurance unless the user stops using the bike when he/she wants to adjust the setting of the bike. It may need several times of test to get a suitable setting of the bike. There is also higher risk of sport injuries if the user changes the bike setting improperly by himself/herself.</p>

Advantages	This present apparatus can be used to immediately obtain the user's physical vigor, which is then feed-backed to adjust automatically the seat position, speed or assistive power-supply to match the user's physical vigor and posture. Users need not to stop using bike to adjust the bike setting. The current apparatus can help users exercise continuously within the tolerance of the user's muscle strength. With decreased risk of sport injury, users can exercise to achieve both target heart rates and movement duration.
Market Potential	This Physical Vigor Feedback Apparatus can be used to pedaling equipments, such as bicycles, exercise bikes, and stepping machines etc. Because the conscious of health increases and the pedaling equipments become popular, this patent can bring a considerable benefit to the industry of sport and athletic equipments.
IP Right(s)	