




## Presentation Form

Please complete the below information in English. This form would be distributed to the reporters in the press conference.

<b>Title</b>	A Novel and Green Design that Converts Waste and Destructive Energies Generated from Operating Machines into Useful Electricity
<b>Technology Description</b> (Around 100 words)	Wireless sensors, which are widely used to capture sensory data from machines for their health monitoring, are commonly powered by batteries. The need of frequent replacement of batteries is undesirable as the monitored machine may be located remotely or installed in a hazardous place. A novel alternative is to recharge the batteries by harvesting wasted energies, such as vibration and heat, generated from the on-site machine. The energy harvester can absorb destructive vibration and convert it to electricity so as to power the wireless sensor continuously. Hence, the sensor becomes self-sustainable in power consumption. Since the destructive vibration has been absorbed, the machine becomes healthier. Moreover, less disposal of used batteries means less harm to earth.
<b>Speaker</b>	Dr. Peter W. Tse
<b>Position</b>	Director of the Croucher Optical Nondestructive Testing (CONDT) and the Smart Engineering Asset Management (SEAM) Laboratory Associate Professor of the Department of Manufacturing Engineering and Engineering Management
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<b>Related Illustrations</b> (E.g. Pictures, graphics, website etc, related to the technology)	

## 講題資料表

請用中文填寫下列資料，資料將會經整理並印製成資料表在記者會上派發，以便傳媒參考，謝謝！

<b>題目</b>	從運行機器中提取廢棄能量轉化成有用的電力之嶄新設計
<b>技術/科技簡介</b>  (約一百字)	<p>無線設備已經廣泛應用在機器健康監測中，然而，需要頻繁更換電池，特別對安裝在危險地方的設備，就大大降低了應用效率和使用安全性。爲了克服這些缺陷，新的解決方法是從環境中獲取能量來對電池進行充電。</p> <p>在這項研究中，我們提出了幾個新穎的設計使得能量采集器的輸出能量可以達到最大。通過這些設計，我們用能量採集器把機器的振動能量轉化成電能來給無線傳感器供電，從而使得無線傳感器可以自我維持能量的供給。另外，對於任何運行中的機器，它能吸收那些對機器有害的振動能量，從而使得機器壽命可以更長，並且工作環境更安靜。</p>
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