

## Simultaneous Wireless Information and Power Transfer (SWIPT): A New Transformational Technology in Wireless Communica- tions

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Wireless technology is so widespread today that its absence from communication systems would put the future of such systems in uncertainty. The idea that mobile phones, tablets, or even electric vehicles would have the smart charging capability in the not-so-distant future, is very exciting. From a different perspective, however, the thought of the huge impact that a full power loss would have upon human safety, and rescue operations in human adversities and natural disasters, is harrowing. Indeed, all of us have to deal with a much smaller scale of this problem, that is, the need for recharge or replacement of our mobile phone or tablet batteries, on a regular basis; since the operation of these communication systems is essentially limited to the life of their energy source, i.e. batteries. Therefore, considering the infrastructure in place for information transmission and the recent advances in wireless energy transfer, it is perhaps time to conceive a future of more than just a dream for simultaneous wireless information and power transfer (SWIPT). As a key enabling technology for truly perpetual communications, SWIPT offers the potential to build networks with larger throughput, higher robustness, and increased flexibility compared to battery-powered counterparts; though undoubtedly, it also introduces significant research and implementation challenges.

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