

#### **An empirical modeling for the baseline energy consumption of an NB-IoT radio transceiver**

**Khan, Sikandar Muhammad Zulqarnain; Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar; Päränd, Sven; Verikoukis, Christos** IEEE Internet of Things Journal 2021 / p. 14756-14772 : ill <https://doi.org/10.1109/JIOT.2021.3072769> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### **Evaluation of low power wide area network technologies for smart urban drainage systems**

**Malik, Hassan; Kändler, Nils; Alam, Muhammad Mahtab; Annus, Ivar; Le Moullec, Yannick; Kuusik, Alar** 2018 IEEE : International Conference on Environmental Engineering, March 12-14, 2018 Milan Italy : conference proceedings 2018 / 5 p. : ill <https://doi.org/10.1109/EE1.2018.8385262>

#### **Narrowband internet of things (NB-IoT) : from physical (PHY) and media access control (MAC) layers perspectives**

**Mwakwata, Collins Burton; Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven; Mumtaz, Shahid** Sensors 2019 / art. 2613, 34 p.: ill <https://doi.org/10.3390/s19112613> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

#### **Narrowband Internet of Things (NB-IoT) : from physical (PHY) and Media Access Control (MAC) layers perspectives : [an article in collection]**

**Mwakwata, Collins Burton; Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Päränd, Sven; Mumtaz, Shahid** Internet of things and sensors networks in 5G wireless communications 2020 / p. 39-72 : ill <https://doi.org/10.3390/books978-3-03928-149-7> <https://doi.org/10.3390/s19112613>

#### **Narrowband internet of things (NBIIoT) for industrial automation**

**Malik, Hassan; Alam, Muhammad Mahtab; Kuusik, Alar; Le Moullec, Yannick; Päränd, Sven** Wireless automation as an enabler for the next industrial revolution 2020 / p. 65-87 <https://doi.org/10.1002/9781119552635.ch4>

#### **NarrowBand-IoT performance analysis for healthcare applications**

**Malik, Hassan; Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar** Procedia computer science 2018 / p. 1077–1083 <https://doi.org/10.1016/j.procs.2018.04.156> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

#### **Radio resource management scheme in NB-IoT systems**

**Malik, Hassan; Pervaiz, Haris; Alam, Muhammad Mahtab; Le Moullec, Yannick; Kuusik, Alar; Imran, Muhammad Ali** IEEE Access 2018 / p. 15051-15064 : ill <https://doi.org/10.1109/ACCESS.2018.2812299> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)