

# François LEMERCIER

Postdoctoral Researcher at CNRS

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## Personal information

Nationality *French*

Birthdate *November the 16th, 1982*

## Professional Experience

03/2020– Present **Postdoctoral Researcher**, CNRS / IRISA, MYRIADS team, Rennes, France.

**Subject:** "Impact of the TIC networks performance on the Energy Efficiency in Smart Grids networks"

12/18–03/2020 **Postdoctoral Researcher**, National Institute of Standards and Technologies (NIST), Gaithersburg, USA.

**Subject:** "5G Team: Implementation and evaluation of 802.11ay MAC"

12/15–12/18 **Ph.D. Candidate**, Itron / IMT Atlantique, Issy-Les-Moulineaux / Rennes, France.

**Subject:** "Multiple interface management in Smart Grid networks"

12/09–11/15 **Engineer**, University of Rennes 1, Rennes, France.

**Description:** Coordinator of the Bachelor degree SPH, involved in several projects with ESIR engineering school. Main tasks:

- Writing courses and practical activities of most of building and home automation protocols (KNX, LonWorks, BACnet, Modbus, DALi, EnOcean)
- Trainees supervision of Master thesis and engineer projects (ESIR / ISTIC)
- Header of the KNX training center of University of Rennes 1

08/06–11/09 **Software Engineer**, Marsollier Domotique, Rennes, France.

**Description:** Several projects related to Java application controlling building efficiency

04/06–07/06 **Engineer Internship**, Marsollier Domotique, Rennes, France.

**Subject:** "A KNX web application for home remote control"

Teaching **2009 - 2016**, University of Rennes 1, Lectures & Lab Session, Eng. / M.Sc. / B.Sc

**Topics:** "Building Automation protocols, Supervision software, Java programming"

## Education

2015–2018 **Ph.D. in Computer Science**, OCIF, IRISA, IMT Atlantique, Rennes, France.

**Thesis title** "Multiple hybrid interface management in Smart Grid networks"

**Thesis supervisor:** Prof. Nicolas Montavont & Dr. Laurent Toutain

2013–2014 **M.Sc. in Computer Science**, "Ingénierie des TIC pour les éco-activités", University of Rennes 1, Rennes, France - Mention: "Très Bien"

2005–2006 **M.Sc. in Electrical Engineering**, "Electronique, Domotique et Réseaux Intérieurs", University of Rennes 1, Rennes, France - Mention: "Bien"

Master Thesis: "A KNX web application for home remote control", supervised by Morgan Beaubras.

2003–2004 **B.Sc. in Electrical Engineering**, *Ingénierie Electrique*", University of Rennes 1, Rennes, France - Mention: "Passable" (Rank: 3/41)

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## Languages

French Mother tongue  
English Fluent

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## Skills

Network protocols

- o IEEE 802.15.4 - IEEE P1901.2 - 802.11ad - ay - G3-PLC
- o 6tsch, CSMA, 6LoWPAN
- o Reactive Routing protocols: AODV, LOAD, LOADng
- o Proactive Routing protocols: RPL

Network simulators

- o Riverbed Modeler
- o Simgrid
- o ns-3
- o Cooja

Field protocols

- o BACnet, LonWorks, KNX, ModBus, Zigbee, Z-wave, MS/TP, X3D

Languages **C, C++, Java, Python**

Operating systems **Linux, Contiki OS, Mac OS, Windows**

Others **Docker, Git, Subversion, Eclipse, L<sup>A</sup>T<sub>E</sub>X**

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## List of Refereed Publications

### PhD Thesis

2019 [t6-t1] *"Multiple interface management in smart grid networks"*, F. Lemercier

### Book Chapters

2017 [t5-b2] *"Communication architectures and technologies for advanced Smart Grid Services"*, F. Lemercier, G. Habault, G. Z. Papadopoulos, P. Maille, P. Chatzimisios & N. Montavont, To appear in **Transportation and Power Grid in Smart Cities: Communication Networks and Services**, John Wiley, 2017.

### Journals

2017 [t4-j1] *"Monitoring Traffic Optimization in Smart Grid"*, G. Habault, M. LeFrancois, F. Lemercier, N. Montavont, P. Chatzimisios and G. Z. Papadopoulos, In **IEEE Transactions on Industrial Informatics**, 2017.

### International Conferences

2018 [t3-p3] *"A New Objective Function for Hybrid Network in the Smart Grid."*, F. Lemercier, N. Montavont, L. Toutain & P. Chiummiento, In: 19th IEEE International Symposium on "A World of Wireless, Mobile and Multimedia Networks", WoWMoM 2018, Chania, Greece, June 12-15, 2018.

2018 [t3-p2] "*Performance Evaluation of a RPL Hybrid Objective Function for the Smart Grid Network.*", [F. Lemerrier](#) & N. Montavont, In: Ad-hoc, Mobile, and Wireless Networks - 17th International Conference on Ad Hoc Networks and Wireless, ADHOC-NOW 2018, Saint-Malo, France, September 5-7, 2018.

2016 [t3-p1] "*Support for hybrid network in RPL*", [F. Lemerrier](#), N. Montavont, L. Toutain, K. Vijayasankar, R. Vedantham & P. Chiumminto, In Proc. **IEEE Smartgridcomm** - Sydney, Australia, November 2016.

### Demos and Posters

2021 [t2-d1] "*Co-Simulation of Power Systems and Computing Systems using the FMI Standard*", A.Gougeon, B. Camus, [F. Lemerrier](#), M.Quinson, A.Blavette & A-C.Orgerie, In Proc. **IEEE IM 2021 International Conference** - Bordeaux, France, May 2021.

2018 [t2-p3] "*Performance Evaluation of a RPL Hybrid Objective Function for The Smart Grid Network*", [F. Lemerrier](#), In: IEEE WoWMoM 2018 International Conference, Chania, Greece, June 12-15, 2018.

2016 [t2-p2] "*Support For Hybrid Network*", [F. Lemerrier](#), In: RESCOM 2016 Summer School, Guidel Plage, France, June, 2016.

### Books and Online Course

2014 [t1-b1] "*Usage de l'habitat*", [F. Lemerrier](#), C. Cappe, M. C. Godet, P. Barbel & E. Poilvet, **ENVAM** - [www.envam.org](http://www.envam.org), February 2014.

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## Scientific activities

### PC Membership, Reviewer

2020 **IEEE ISCC 2020**, Rennes, France

2019 **IEEE DIPI '19**, Washington D.C., USA

2018 **AdHoc-Now 2018**, Saint-Malo, France

### Other

2020 **Qualification aux postes de Maitre de conférence**

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## References

Nada Golmie **Ph.D**, *CTL*, WND, NIST, USA  
[nada.golmie@nist.gov](mailto:nada.golmie@nist.gov), *Postdoc supervisor*

Laurent Toutain **HDR**, *OCIF*, *IRISA*, IMT Atlantique, FR  
[laurent.toutain@imt-atlantique.fr](mailto:laurent.toutain@imt-atlantique.fr), *Ph.D. thesis director*

Nicolas Montavont **Professor**, *OCIF*, *IRISA*, IMT Atlantique, FR  
[nicolas.montavont@imt-atlantique.fr](mailto:nicolas.montavont@imt-atlantique.fr), *Ph.D. thesis advisor*

Olivier Barais **Professor**, *DiverSE*, *IRISA*, University of Rennes 1, FR  
[barais@irisa.fr](mailto:barais@irisa.fr), *Ph.D. thesis advisor*

Philippe Chiumminto **R&D Manager**, *Itron*, France, FR  
[philippe.chiumminto@itron.com](mailto:philippe.chiumminto@itron.com), *Ph.D. thesis advisor*

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## Interests & hobbies

2017-2018 Secretary of ADER, Ph.D. students association of IMT Atlantique, Rennes, France  
Reading, playing music, electronic / 3D printing, badminton, traveling.