

Kristel Fobelets

PhD, FIET, FInstP, senior member IEEE

Reader in Microelectronics

Director of Undergraduate Studies

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Department of Electrical and Electronic Engineering

Optical and semiconductor devices group

Imperial College London

Profile

As director of undergraduate studies, I manage and organize teaching and teaching infrastructure in the department, liaising with a wide range of stakeholders including teaching staff, administrative and technical support staff and the undergraduate student cohort. I am an excellent team player, a characteristic that has led to many successes in my innovations in the department's teaching, learning and support provision. I successfully led a major curriculum review and co-led a successful bid in restructuring the Educational Technology team who support pedagogic transformation in the Faculty of Engineering.

As member of the teaching staff, I have delivered high quality core and optional modules that are consistently praised by the students and the College. I have been awarded different prizes and nominations for my work in this field.

I am an expert in the field of design and development of novel semiconductor devices for low power electronics, energy generation & storage and sensing. My extensive research output is evidence of an active research profile with major impact on innovation in niche areas. I have expertise in research supervision at the level of undergraduate, postgraduate and research assistant.

Appointments

2014-present: Director of Undergraduate Studies, Department of Electrical and Electronic Engineering.

2011-2014: Senior tutor, Department of Electrical and Electronic Engineering

2009-present: Reader in Microelectronics in the Electrical and Electronic Engineering Department, Imperial College of Medicine, Science and Technology, London, U.K.

2003-2009: Senior lecturer in the Electrical and Electronic Engineering Department, Imperial College of Medicine, Science and Technology, London, U.K.

1996-2003: Lecturer in the Electrical and Electronic Engineering Department, Imperial College of Medicine, Science and Technology, London, U.K.

1995-1996: Postdoctoral position in the Electrical and Electronic Engineering Department, Imperial College of Medicine, Science and Technology, London, U.K.

1994-1995: Postdoctoral position in Trinity College Dublin, Ireland in collaboration with Hitachi Dublin Laboratories, Ireland. I obtained a Human Capital & Mobility grant for this position.

1993-1994: Teaching Assistant in the Faculty of Engineering, Dept. of Electrical Engineering (ETRO), Free University of Brussels (VUB), Belgium

1994: PhD in Microelectronics from the University of Brussels/IMEC, Belgium.



Memberships of professional bodies and committees

- Member of Senate of Imperial College London, from 2014 (re-elected twice)
- Chair of the E-learning Implementation group, Faculty of Engineering, Imperial College (from 2017)
- Patron of the Women in Engineering Society, EEE Department, Imperial College (from 2015)
- Departmental ambassador for women, EEE department, Imperial College London (from 2012)
- Senior Member IEEE, Fellow IET and Fellow of the Institute of Physics
- Member of the Centre for Terahertz Science and Engineering, IC, London
- Member of the Programme Committee of the International Conference on Micro and Nano Engineering, MNE 2013.
- Member of the Technical Committee of the International SiGe Technology and Device Meeting, ISTDM 2012
- Consultancy for IC Consultants Ltd – report: Decentralisation of Electrical Power (2007)
- Member of the steering committee of the Centre of Electronic Devices and Materials (CEMD) (1998-2000)
- Member of the communication committee of the Centre for Electronic Materials and Devices, CEMD (1998 -2000)

Reviewing services

- Reviewer for Department of Health – grant proposal scheme
- Reviewer for EPSRC, panel member – grant proposal scheme
- Member of Editorial board of *Journal of Semiconductors* since 2016
- Reviewer for international journals from InstP, IEE, IEEE and Solid State Electronics
- Reviewer for World Scientific (UK) Ltd & Imperial College Press

Prizes and Nominations

- 2016 Student academic choice award nominee for excellence in feedback and assessment.
- 2015 EESoc Award for Biggest overall staff contributor to Your EE Experience
- 2014 EESoc Leavers Award
- 2013 EEE department nomination for Excellence in teaching.
- 2013 Student academic choice award nominee for excellence in undergraduate teaching.
- 2008 Best paper award at the MIEL conference for Microelectronics reliability.
- 2007 Best invited paper award at the WOFE workshop for the invention of the SGrFET.
- 1999 Rector's prize for Excellence in teaching, Imperial College London.
- 1994 Human Capital and Mobility Grant from the EU for research abroad (Trinity College Dublin).
- 1989 Laureate of the Belgian Universities Concourse for engineers for my MSc project.
- 1989 IWONL scholarship from Belgian Government for my PhD research.

Contributions to Teaching and Learning

I have made major changes to the department's teaching and learning strategy and brought it in line with the HE vision for the 21st century. I transformed the FoE's support for pedagogic renovation by launching the EdTech team.

At departmental level

- delivered the curriculum review, renovating teaching and learning and leading it to successful implementation in Oct 2019. A goal that was not achieved before.
- transformed support in diversity and inclusivity by employing a non-academic senior tutor and a well-being advisor, creating the Women in Engineering Society, introducing unconscious bias workshops for 1st year UGs, gender bias workshops for GTAs and introduced the automatic laptop lending scheme supporting specifically WP students in the BYOD scheme.
- showed leadership in renovating teaching rooms to improve the teaching and learning experience. This includes the College funded refurbished computer lab, the expansion of the capacity of the level 5 project lab and the renovation of level 1 lab equipment.
- led the metamorphosis of the examiners' meeting, increasing efficiency, strengthening the department's standing as seen by the external examiners and reported to College while keeping in line with College requirements. Key innovative aspects are the online examiners' comment form, mentimeter voting, anonymous mitigating circumstance reporting.
- improved student satisfaction by employing 6 additional teaching fellows (with 2 funded by College), boosting SOLE and NSS results.
- restructured the education team, improving communication and teamwork and enabling career progression of the team members.
- ensured IET accredited status until 2023.

At Faculty/College level

- led the Pedagogic Transformation bid of the FoE to success. The > £3.5 million College funding enabled us to build a FoE EdTech team to support On-Campus Pedagogic Transformation.
- active engagement and commitment has contributed to the success of the College's new exam timetabling and room sharing initiative, identifying the department as supporters of infrastructure sharing in line with College strategy.
- *Committee Memberships*
 - FTC and FEC: recently initiated the update of plagiarism rules and introduced Wiseflow BYOD tests. Both initiatives will be taken up by FoE.
 - Senate (re-elected twice): support the faculty position on student and staff matters.
 - Chair of the FoE e-learning implementation group: implemented a new vision and strategy leading to active participation of the members in pedagogic transformation.

Outreach

Initiated and led a major donation of 75 desktop computers and decommissioned electronic lab equipment to the University of Sierra Leone. This equipment will be put into use with media attention at the end of Nov 2019, enabling improved HE teaching and learning experience in Sierra Leone.

Contributions to Research

My vision is to enable the movement towards a zero pollution economy by overhauling the use of traditionally scarce and poisonous elements, often sourced in conflict zones, for the fabrication of energy generators and storage devices. Si- and carbon-based nanomaterials, packaged in a matrix of e.g. cellulose



are suitable candidates for this technology. My aim in developing non-hazardous, recyclable and flexible devices is to create responsibly sourced wearable technology. Useful wearable technology, in the sense of implementing functions with a direct impact on health and safety of the user, are currently “unwearable” due to the integration of hard electronics into soft materials. There is scope to revolutionise wearable electrical systems integration, combining flexible energy scavenging, generation and storage devices with e-garments without impeding on wearability nor electrical functionality.

Main contributions in the field of green energy generation and storage devices are represented in the following selected research papers, published in high quality research journals:

1. B. Xu, and K. Fobelets, “Spin-on-Doping for Output Power Improvement of Silicon Nanowire Array based Thermoelectric Power Generators”, *J. Appl. Phys.* **115**, 214306 (2014)
2. T. Rahman, M. Navarro-Cia, and K. Fobelets, “High density micro-pyramids with silicon nanowire array for photovoltaic applications”, *Nanotechnology* **25** 485202 (2014)
3. F. Konstantinou, A. Shougee, T. Albrecht, and K. Fobelets, TiO₂ coated Si nanowire electrodes for electrochemical double layer capacitors in room temperature ionic liquid, *Journal of Physics D: applied physics*, **50**, 415503 (2017)

A novel contribution to the field of wearable electronics can be found in:

K. Fobelets, K. Thielemans, A. Mathivanan, and C. Papavassiliou, “Characterisation of knitted coils for e-textiles”, *IEEE Sensors Journal* 19(18), pp. 7835 – 7840 (2019)

I have maintained a strong research output with 17 journal papers and 19 conference presentations of which 2 invited, since 2014. Paper 1 above is selected as a 3*/4 contribution for REF.

Except the large grants obtained for teaching and learning, I have written more than 10 research proposals of which two were funded and one is currently under review: “Developing sustainable biochar-derived advanced novel, non-toxic and recyclable thermoelectric materials whilst supporting clean cooking in Nigeria” - GCRF Grant Reference: EP/T020474/1 - Co-I (PI Imperial College London) (reviewer feedback 6, 5, 5, 2, now with EPSRC).

I am currently writing two research grants:

- 1) EPSRC – Nanocontact thermal rectification diode – PI (Co-I University of Southampton)
- 2) MRC – Wearable garment for inductive plethysmography of infants and the elderly – PI (Co-I Imperial College London)

Research Assistants supervised

1. James Hampson (1997 – 2001)
2. Ryan Ferguson (2001 – 2002)
3. Antonio Vilches (2002 – 2004)
4. Anke Lohmann (2004)
5. Huang-San Yuk (2003 - 2004)
6. Chuanbo Li (2010 – 2013)
7. M. M. Ahmad (2012 – 2013)



PhD students supervised

1. W. Jeamsaksiri, "Modelling and simulation of SiGe n-channel HFETs for low power applications" (1997-2002), result: PhD.
2. R.S. Ferguson, "Characterisation of Silicon-Germanium Heterostuctures by Kelvin Probe Force Microscopy", (1997-2002), result: PhD.
3. S.M. Li, "Alternative approaches to Silicon-Germanium Modulation Doped Field Effect Transistor processing", (1997 - 2003), result: PhD
4. A. Vilches, "SiGe HFETs micropower circuits", (2000 - 2003), result: PhD.
5. V. Gaspari, "Temperature effects in SiGe Modulation Doped Field Effect Transistors", (2001 - 2004), result: PhD. H-S Yuk, "Fabrication of SiGe-on-insulator for strained-Si heterostructure technologies", (2000 - 2004), result: PhD.
6. P.W. Ding, "Development of the screen-grid FET", (2004 - 2008), result: PhD.
7. Y. Shadrokhsikary, "Benchmarking the SGrFET", (2006 - 2010), result: PhD.
8. B. Xu, "Si/SiGe nanowire arrays for thermoelectric power generation", (2010 - 2014), result: PhD.
9. T. Rahman, "Si nanowire based hybrid photovoltaics", (2010 - 2014), result: PhD.
10. A. Shougee, "Silicon nanowire arrays for supercapacitors, (2014 - 2018), result: PhD
11. C. Panteli, "Hollow nanoneedles for sensing applications", (2015 - 2019), result: PhD
12. A. Hamid, "Reconfigurable nanowire logic", (2016 - ...)

Research Funding

Source of Funds	Title of Project	Principal investigator	Duration (months)	Start Date	Total Value
EPSRC	SiGe for MOS Technologies	K. Fobelets	36	1997	£255k
DERA	SiGe MODFETs prospectives	C. Papavassiliou	12	1998	£15k
British Council (UK-ES)	SiGe MODFET for μ power applications	K. Fobelets	24	1999	£8.8k
EPSRC	SiGe for MOS Technologies, II	K. Fobelets	36	2001	£470k
EPSRC	Ultrametrology for MEMS	R.R.A. Syms	36	2001	£242k
Royal Society/Wolfson Foundation	Microstructures for nanoscale measurements	R.R.A. Syms		2002	£157k
NDS	PolySi local anneal	K. Fobelets	1	2003	£2.2k
EPSRC - pump priming project	Implantation and local anneal of polySi	K. Fobelets	1	2003	£5k
EPSRC - pump priming project	Feasibility study of the SGFET	K. Fobelets	12	2005	£30k
EPSRC	Benchmarking of the SGrFET	K. Fobelets	36	2006	£160k
EPSRC	Low frequency noise/travel grant	K.Fobelets	12	2007	£34k
EPSRC	Si/SiGe nanowire arrays for thermoelectricity	K. Fobelets	12	2007	£155k
IC-Teaching Development Grant	Development of EE-VIL	K. Fobelets/P. Mitcheson	12	2008	£1k
Royal Academy of Engineering	Distinguished visiting fellow	K. Fobelets	1	2008	£6k
E-ON	Si/SiGe nanowire arrays for	K. Fobelets	36	2009	550k Euro

	thermoelectric power scavenging				
EPSRC	Retaining key members of staff	K. Fobelets	6	2012	£100k
David Bingham gift trust	Hardware platform for coursework and projects	K. Fobelets		2016	£34k
ICON grant	Reconfigurable nanowires for thermal rectification	K. Fobelets	36	2016	£50k
EU	Interdisciplinary and Intersectorial opportunities – c-extended	J. Barria	36	2017	£100k
Pedagogic Transformation Imperial College London	Pedagogic transformation of on-campus modules	S. Lock and K. Fobelets	60	2018	£3.6million

Publications

Google citation link: <https://scholar.google.co.uk/citations?user=uKoe-24AAAAJ&hl=en>

Regular papers

4. J. Danckaert, K. Fobelets, I. Veretennicoff, G. Vitrant, and R. Reinisch, "Dispersive optical bistability in stratified structures", *Phys.Rev. B* 44(15), 8214 (1991)
5. K. Fobelets, J. Genoe, R. Vounckx, and G. Borghs, "Determination of the AlAs/InGaAs band offset using resonant tunneling diodes", *Microstructures and Superlattices* 11(1), 87 (1992)
6. J. Genoe, C. Van Hoof, W. Van Roy, J. H. Smet, K. Fobelets, R. P. Mertens and G. Borghs, "Capacitances in double barrier tunneling structures", *IEEE Trans. Elec. Devs.* ED-38, 2006-2012 (1991)
7. J. Genoe, C. Van Hoof, K. Fobelets, R. Mertens and G. Borghs, "pnp resonant tunneling light emitting transistor", *Appl. Phys. Lett.* 61, 1051-1053 (1992)
8. K. Fobelets, J. Genoe, R. Vounckx, R.P. Mertens, and G. Borghs, "Generation of four negative differential resistance regions using two resonant tunnelling diodes", *Microelectronic Engineering* 19, 887-890 (1992)
9. K. Fobelets, R. Vounckx, and G. Borghs : "Influence of the resistances on the characteristics of vertically integrated resonant tunnelling diodes", *Electron.Lett.*, 29(1), 57 (1993)
10. K. Fobelets, R. Vounckx, and G. Borghs : "Matrix formalism for the triple band effective mass equation", *Semiconductor Science and Technology* 8, 1815 (1993)
11. K. Fobelets, J. Genoe, R. Vounckx, and G. Borghs : "A proposal for a three bit ADC using three resonant tunneling diodes", *Semiconductor Science and Technology* 8, 2106 (1993)
12. K. Fobelets, H. Grönqvist, J. Genoe, R. Vounckx, L. Lundgren, and G. Borghs : "High frequency capacitances in resonant interband tunneling diodes", *Appl.Phys.Lett.* 64 (19), 2523 (1994).
13. K. Fobelets, R. Vounckx, and G. Borghs, "A GaAs pressure sensor based on resonant tunnelling diodes", *J.Micromech.Microeng.* 4 (3), 123 (1994).
14. K. Fobelets, G. Borghs, and J. Hegarty, "Experimental drain current drop back in GaAs MESFETs", *Electronics Lett.* 31 (23), 2042 (1995)
15. K. Fobelets, C. Van Hoof, J. Genoe, J. Stake, L. Lundgren, and G. Borghs, "High frequency capacitance of bipolar resonant tunnelling diodes", *J.Appl.Phys.* 79(2), 905 (1996)
16. J. Genoe, K. Fobelets, C. Van Hoof, and G. Borghs, "The in-plane dispersion relations of InAs/ AlSb/ GaSb/ AlSb/ InAs interband resonant tunneling diodes", *Phys. Rev. B* 52 (19), November 15, 1995, pp 14025-14034; *ibid*, *Phys. Rev. B* 53, May 15, 1996, pp 13194
17. K. Fobelets, B. Kelly, P. Horan, and J. Hegarty, "Controlled shift of the optical resonance of fully processed asymmetric Fabry-Perot modulator arrays", *Semiconductor Science and Technology* 11(4), 582 (1996)
18. K. Fobelets, and K. Thielemans, "Optical media with an imaginary third order nonlinearity analyzed by Hamiltonian systems", *Phys.Rev. A* 53, 4400 (1996)
19. T J Thornton, J M Fernandez, S Kaya, P W Green and K Fobelets, "Si:SiGe Quantum Wells grown on (118) Substrates: Surface Morphology and Transport Properties", *Appl. Phys. Letts.* 70 1278-1280 (1997)
20. S Kaya, T J Thornton, P W Green, K Fobelets and J M Fernandez, "Evidence for Inter-Miniband Scattering Due to Electron Heating in Si:SiGe Quantum Wells Grown on Tilted Substrates", *Phys. Stat. Sol(b)* 204, 227-229 (1997)
21. K. Fobelets, and G. Borghs, "Influence of the undoped spacer layer thickness on the DC characteristics of n-type GaAs/AlAs MESFETs", *Semicond.Sci.Technol.* 13, 318-321 (1998).

22. C. Gatzke, S.J. Webb, K. Fobelets, and R.A. Stradling, "In situ Raman spectroscopy of the selective etching of antimonides in GaSb/AlSb/InAs heterostructures", *Semicond.Sci.Technol.* 13, 399-403 (1998).
23. C. Gatzke, S.J. Webb, K. Fobelets, and R.A. Stradling, "in-situ monitoring of the selective etching of antimonides in GaSb/AlSb/InAs heterostructures using Raman spectroscopy", *Compound Semicon 1997 Inst.Phys.Conf.Series* (156) 337-340 (1998)
24. K. Fobelets, W. Jeamsaksiri, J. Hampson, C. Toumazou, and T.Thornton, "Si:SiGe MODFET current mirror", *Electron.Lett.* 34(22) 2076 (1998)
25. J C Yeoh, P W Green, T J Thornton, S Kaya, K Fobelets and J M Fernandez, "MOS gated Si:SiGe quantum wells by anodic oxidation", *Semicond.Sci.Technol.* 13, 1442 (1998)
26. C. Gatzke, K. Fobelets, A.C. Rowe, R.A. Stradling, and S.A. Solin, "Hot electron effects in InAs/AlSb/GaSb quantum wells," *Compound Semicon 1998 Inst.Phys.Conf.Series* (162) 349-354 (1999)
27. Papavassiliou C., Fobelets K., Toumazou C. "SiGe hetero-FET potential for micro-power applications" invited paper, *IEICE Trans. Electron*, E00-A (2000)
28. W.Jeamsaksiri, J.E. Velazquez-Perez, K. Fobelets, "Optimised n-channel Si/SiGe HFETs design for V_{TH} shift immunity", *Solid State Electronics* 46 (12): 2241-2245 DEC 2002
29. R.S. Ferguson, K. Fobelets, L.F. Cohen, and M. Pawlik, "A new bevelling technique for low surface roughness base on CMP", *IEE Electron. Lett.* 38 (17), 998 (2002)
30. S.H. Olsen, A.G. O'Neill, D.J. Norris, A.G. Cullis, N.J. Woods, J. Zhang, K. Fobelets, and H.A. Kemhadjian, "Strained Si/SiGe n-channel MOSFETs: impact of cross-hatching on device performance", *Semiconductor Sci.Techn.* 17(7), 655 (2002)
31. S.M. Li, and K. Fobelets, "Si/SiGe n-channel Modulation Doped Field Effect Transistor on air", *IEE Electron. Lett.* 38 (18), 1064 (2002)
32. R.S. Ferguson, K. Fobelets, and L. Cohen, "Kelvin probe force microscopy of bevelled semiconductors", *J Vac Sci Technol B* 20 (5), pp 2133-2136 (Sept/Oct 2002)
33. K. Fobelets, W.Jeamsaksiri, J. Hampson, C. Toumazou, "Simulations of Si:SiGe MODFET analogue applications" *International Journal of Electronics*, 89(8), pp593-602 (2002)
34. R.S. Ferguson, K. Fobelets, and L. Cohen, "Kelvin probe force microscopy of bevelled semiconductors", *Virtual Journal of Nanoscale Science & Technology*, December 23 (2002) at <http://www.vjnano.org>.
35. R.S. Ferguson, K. Fobelets, M. M. Ahmad, D.J. Norris, A.G. Cullis, J. Zhang and L. F. Cohen, "Determining the composition of SiGe heterostructures using an optical microscope" *Semiconductor Science and Technology* 18(4), pp390-392 (2003)
36. A.Vilches, K. Fobelets, K. Michelakis, S. Despotopoulos, C. Papavassiliou, T. Hackbarth, and U. König, "A Novel Monolithic Micropower Amplifier Using a SiGe n-MODFET Device", *IEE Electronics Letters*, 39 (12): 884-886 JUN 12 2003
37. S.H. Olsen SH, O'Neill AG, Norris DJ, Cullis AG, Fobelets K, Kemhadjian HA, "Impact of virtual substrate quality on performance enhancements in strained Si/SiGe heterojunction n-channel MOSFETs", *Solid-State Electronics*, 47 (8): 1289-1295 AUG 2003
38. V. Gaspari, K. Fobelets, J.E. Velazquez-Perez, R. Ferguson, K. Michelakis, S. Despotopoulos, and C. Papavassiliou, "Effect of temperature on the transfer characteristic of a 0.5 μ m-gate Si:SiGe depletion-mode n-MODFET", *Appl. Surface Sci.* 224(1-4), 15 March 2004, Pages 390-393
39. K. Michelakis, S. Despotopoulos, V. Gaspari, A. Vilches, K. Fobelets, C. Papavassiliou, and C. Toumazou, "SiGe virtual substrate HMOS transistor for analogue applications", *Appl. Surface Sci.* 224(1-4), 15 March 2004, Pages 386-389
40. K. Fobelets, T.L. Tan, K. Thielemans, M.M. Ahmad, R.S. Ferguson, and J. Zhang, "Colour coding Ge concentrations in $Si_{1-x}Ge_x$ by bevelling and oxidation: CABOOM", *Semiconductor Science and Technology* 19(3) p 510-515 (March 2004)
41. J.E. Velazquez, K. Fobelets, and V. Gaspari, "Study of current fluctuations in deep-submicron Si/SiGe n-channel MOSFET: impact of relevant technological parameters on the thermal noise performance", *Semicond. Sci. Technol.* 19 (April 2004) S191-S194
42. V. Gaspari, K. Fobelets, P. W. Ding, S. H. Olsen, A. G. O'Neill, and J. Zhang, "Temperature dependence of sub-micron strained-Si surface channel n-type MOSFETs in dynamic-threshold mode", *IEEE Electron Dev. Lett.* 25(5), 334 (2004)
43. A. Vilches, R. Loga, K. Michelakis, K. Fobelets, C. Papavassiliou, D. Haigh, "Analogue Micropower FET Techniques Review" *Semicon. Sci. & Technol.* 19 (7) R19-R34 (2004).
44. A. Vilches, K. Michelakis, K. Fobelets, C. Papavassiliou, T. Hackbarth and U. König, "Buried-channel SiGe HMODFET device potential for micropower applications" *Solid State Electronics* 48 (8): 1423-1431 (2004)

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46. K. Michelakis, A. Vilches, C. Papavassiliou, S. Despotopoulos, K. Fobelets and C. Toumazou, "Average drift mobility and apparent sheet electron density profiles in strained-Si/SiGe buried-channel depletion-mode n-MOSFETs", *IEEE Transactions on Electron Devices* 51(8), pp. 1309-1314 (2004)
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49. A. Vilches, R. Loga, M. Rahal, K. Fobelets, C. Papavassiliou, and T. J. Hall, "Monolithic Large-Signal Transimpedance Amplifier for use in Multi-Gigabit, Short-Range Optoelectronic Interconnect Applications", *IEEE T Circuits-II* 52 (2): 102-106 (2005).
50. Michelakis K, Despotopoulos S, Papavassiliou C, Vilches A, Fobelets K, Toumazou C, "SiGeHMOSFET monolithic inverting current mirror", *Solid-State Electron.* 49 (4): 591-594 (2005)
51. Gaspari V., Fobelets K., Velazquez-Perez J.E., and Hackbarth T., "DC performance of deep submicrometer Schottky-gated n-channel Si:SiGe heterostructure field effect transistors at low temperatures" *IEEE Trans Electron Dev* 52(9):2067 – 2074 (2005)
52. Fobelets K., Gaspari V., and Ding P.W., "Sub-threshold Operation of a monolithically integrated Strained-Si Current Mirror at low Temperatures", *IEEE Transactions on circuits and systems II* 53(11): 1215-1219 (2006)
53. Fobelets K., P.W. Ding, and Velazquez-Perez J.E., "A novel 3D embedded gate field effect transistor: Device concept and modelling", *Solid State Electronics* 51(5), p749-756 (2007)
54. S. L. Romyantsev, K. Fobelets, T. Hackbarth, M. S. Shur, "Low frequency noise in insulated-gate strained-Si n-channel modulation doped field effect transistors", *Jap. J. Appl. Phys.* 46(7A), pp. 4011-4015 (2007).
55. Fobelets K., Velazquez-Perez J.E and T. Hackbarth, "Study of MOS-gated strained-Si buried channel Field Effect Transistors," *IETE J. of Research, Special Issue on Heterostructure Silicon* 53(3), p253-262 (2007)
56. K. Fobelets, and J.E. Velazquez-Perez, "Rectification in unipolar nanowires", *Physica E: Low-Dimensional Systems and Nanostructures*, 40(7) 2481-2484 (2008)
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58. Y. Shadrokh, K. Fobelets, and J.E. Velázquez-Pérez, "Two Device Screen Grid Field Effect Transistor Logic", *Romanian Journal of Information Science and Technology* 11(1) 37-48 (2008)
59. Y. Shadrokh, K. Fobelets, and J.E. Velázquez-Pérez, "Comparison of the multi-gate functionality of Screen-Grid Field Effect Transistors with finFETs", *Semicond. Sci. Technol.* **23**(9) 095006 (9pp) (2008)
60. S.L. Romyantsev, K. Fobelets, D. Veksler, T. Hackbarth, and M.S. Shur, "Strained Si modulation doped field effect transistors as detectors of terahertz and sub-terahertz radiation", *Semicond. Sci. Technol.* **23**(10) 105001 (4pp) (2008)
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62. K. Fobelets, and J.E. Velazquez-Perez, "Noise in strained Si MOSFETs for low-power applications", *J. Statistical Mechanics – Theory and Experiment*, P01045 (2009). (1.727)
63. K. Fobelets, S. L. Romyantsev, T. Hackbarth, and M. S. Shur, "Trap density in Schottky-gated n-channel strained-Si/SiGe modulation doped field effect transistors", *Solid State Electronics* 53(6), p. 626-629 (2009). (1.438)
64. M. Zaremba-Tymieniecki, C. Li, K. Fobelets, and Z. A. K. Durrani, "Field-effect transistors using silicon nanowires prepared by electroless chemical etching", *IEEE Electron Devices Letters*, 31(8), 860 (2010).
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