

OVERVIEW	PUBLISHED	ACCEPTED
BOOKS	2	3
CHAPTERS	8 (7 INVITED)	5
PATENTS	11	
JOURNALS	37 (2 INVITED)	5 (1 INVITED)
CONFERENCES	219 (28 INVITED)	
TOTAL	290 (38 INVITED, 8 BEST PAPER AWARDS)	
OTHER CONFERENCES	51 (7 INVITED, 1 BEST PAPER AWARD)	
TECHNICAL REPORTS	71	

BOOKS 2

- V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures
Book in progress (contract signed with World Scientific)
- V. Beiu: VLSI Complexity of Discrete Neural Networks
Book in progress (contract signed with Taylor & Francis)
- V. Beiu, R. Andonie, and R. Dogaru: Fundamental Problems of Neural Networks
Book in progress (contract signed with Technical Printing House)

- B₂ V. Beiu, and S. Harous (Eds.): Innovations
IEEE Press, November 2014 (ISBN 9781479972128) 1–132
<https://doi.org/10.1109/INNOVATIONS.2014.6985768>

- B₁ A. Schmid, S. Goel, W. Wang, V. Beiu, and S. Carrara (Eds.): Nano-Net
Springer, LNICS, October 2009 (ISBN 9783642024276) 1–286
<https://doi.org/10.1007/978-3-642-04850-0>

- … V. Beiu: Neural Networks Using Threshold Gates
A Complexity Analysis of Their Area- and Time-Efficient VLSI Implementations
PhD dissertation (*summa cum laude*), Katholieke Universiteit Leuven, Leuven, Belgium
U.D.C. 621.3.04977: 681.3*C13 (x-27-151779-3), May 1994 1–222

CHAPTERS (7 INVITED) 8

- V. Beiu, and W. Ibrahim: On Enabling Redundant Designs for Nano Computations
In V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures
- V. Beiu, J.M. Quintana, and M.J. Avedillo
Threshold Logic Design and Implementations: From the Early Days into the Nanoera
In V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures
- M.H. Sulieman, and V. Beiu
From Single Electron Technology (SET) Full Adders to Optimal Practical SET Adders
In V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures
- V. Beiu, and U. Rückert: Roadmap for Nano Architectures
In V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures
- J. Nyathi, and V. Beiu: Advanced Techniques for Reducing Power Consumption
In V. Beiu, and U. Rückert (Eds.): Emerging Brain-Inspired Nano-Architectures

- Ch₈ V. Beiu, L. Zhang, A. Beg, W. Ibrahim, and M. Tache: Axon-Inspired Communication Systems **Invited,**
Chapter 15 in J.E. Morris and K. Iniewski (Eds.): Nanoelectronic Device Applications
Handbook, CRC/Taylor & Francis (UK/USA), 2013 (ISBN 9781466565234) 193–208

Ch ₇	A. Beg, M.H. Sulieman, V. Beiu, and W. Ibrahim: Low-Power Reliable Nano Adders Chapter 6 in J.E. Morris and K. Iniewski (Eds.): Nanoelectronic Device Applications Handbook, CRC/Taylor & Francis (UK/USA), 2013 (ISBN 9781466565234)	<i>Invited₆</i>	67–75
Ch ₆	V. Beiu, W. Ibrahim, and S. Lazarova-Molnar On Device-level Majority von Neumann Multiplexing Chapter 72 in J.R. Rabuñal et al. (Eds.): Encyclopedia of Artificial Intelligence IGI Global, USA (Hershey, PA) and UK (London), 2009 (ISBN 9781599048499) https://doi.org/10.4018/978-1-59904-849-9.ch072	<i>Invited₅</i>	471–479
Ch ₅	V. Beiu, and W. Ibrahim: On Computing Nano-Architectures Using Unreliable Nano-Devices Chapter 12 in S.E. Lyshevski (Ed.): Nano- and Molecular-Electronics Handbook Taylor & Francis (UK/USA), May 2007 (ISBN 9780849385285)	<i>Invited₄</i>	1–49
Ch ₄	V. Beiu: Entropy, Constructive Neural Learning, and VLSI Efficiency In R. Andonie, and D. Grosu (Eds.): Neural Priorities in Data Transmission and EDA Tempus SJEP 8180-94, "Transilvania" Univ. of Braşov, Braşov, Romania, 1998	<i>Invited₃</i>	38–74
Ch ₃	V. Beiu: Constant Fan-in Discrete Neural Networks Are VLSI-Optimal Chapter 12 in S.W. Ellacott, J.C. Mason, and I.J. Anderson (Eds.) Mathematics of Neural Networks Models, Algorithms and Applications Kluwer Academic, Boston, MA, USA, 1997 (ISBN 9781461377948) https://doi.org/10.1007/978-1-4615-6099-9_12		89–94
Ch ₂	V. Beiu: Digital Integrated Circuit Implementations (of Neural Networks) Chapter E1.4 in E. Fiesler, and R. Beale (Eds.): Handbook of Neural Computations Institute of Physics, New York, NY, USA, 1996 (ISBN 9780750303125)	<i>Invited₂</i>	E1.4.1–34
Ch ₁	V. Beiu: Optimal VLSI Implementations of Neural Networks Chapter 18 in J.G. Taylor (Ed.): Neural Networks and Their Applications John Wiley & Sons, Chichester, UK, 1996 (ISBN 9780471962823)	<i>Invited₁</i>	255–276

PATENTS

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–	V. Beiu: Procedure Enabling Statistical Meaningful Evaluation of Any Physical Feature or Figure-of-Merit of a Digital or Analog Circuit UAEU Intellectual Property Disclosure, Jul. 16, 2014 & Feb. 11, 2015 (Rouse Ref. U0018-00167)		
P ₁₁	V. Beiu: Low-Power Differential Conductance-Based Logic Gate and Method of Operation Thereof US 6,580,296, June 17, 2003 https://patents.google.com/patent/US6580296/		1–18
P ₁₀	V. Beiu: Microprocessor and a Digital Signal Processor Including Adder and Multiplier Circuits Employing Logic Gates Having Discrete and Weighted Inputs US 6,516,331, February 4, 2003 https://patents.google.com/patent/US6516331/		1–14
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P ₁	V. Beiu: LSI Unit for Mutual Exclusion RO 84763, April 26, 1984 https://patents.google.com/patent/RO84763B1/en	1–12

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...	V. Beiu et al.: The Curse of Constant Failure Rates, Inputs and Averaging – A Comprehensive Review	In planning
...	V. Beiu et al.: Brain-inspired Computing Revisited – Why Energy Consumption Is So Elusive	In progress
...	V. Beiu et al.: The Trustworthy Wings of the Mysterious Butterflies	In progress
...	V. Beiu et al.: Revisiting Schmitt Trigger Tolerance to Variations	In progress
J ₄₂	S.R. Cowell, S. Hoara, and V. Beiu Approximating Hammocks' Reliability with Beta Distributions Intl. J. Computers Communication & Control (IF ~ 2.293, SJR ~ 0.422)	Accepted
J ₄₁	M. Nagy, S.R. Cowell, and V. Beiu: Survey of Cubic Fibonacci Identities Intl. J. Computers Communication & Control (IF ~ 2.293, SJR ~ 0.422)	Accepted
J ₄₀	V. Beiu: Brain Inspired Nano Architectures Intl. J. Computers Communication & Control (IF ~ 2.293, SJR ~ 0.422)	<i>Invited</i> ₃ Accepted
J ₃₉	M. Tache and V. Beiu When Non-Gaussian Distributions Have to Be Considered Theory and Applications of Mathematics & Computer Science	Accepted
J ₃₈	V. Dragoi, S.R. Cowell, M. Nagy, and V. Beiu A Preliminary Investigation of Matchstick Minimal Networks Theory and Applications of Mathematics & Computer Science	Accepted

- J₃₇ V. Dragoi, S.R. Cowell, and V. Beiu
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IEEE Trans. Nanotech., vol. 20, Sep. 2021 (IF ~ 2.570, SJR ~ 0.574) 775–783
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IEEE Comm. Lett., vol. 24, no. 1, Jan. 2020 (IF = 3.436, SJR = 0.929) 62–66
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- J₁ E. Oltean, and V. Beiu: Numerical Aspects in the Implementation of Self-Tuning Algorithms
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- V. Beiu: Why the Brain Can and Silicon Can't – The Energy Conundrum In progress
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- M. Tache, and V. Beiu: On Hammock-based CMOS Inverters In progress
- M. Tache, V. Dragoi, L. Daus, and V. Beiu:
From Trust (Reliable) to Dust (Silicon Chips) – Bridging the Network-Circuit Divide In progress

2021

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- C₂₁₉ V. Beiu: The Unfolding Road from Dust to Trust *Invited*₂₈
- SPIE International Conference "Advances in 3OM: Opto-Mechatronics, Opto-Mechanics and Optical Metrology" (Adv3OM 2021), Timisoara, Romania, December 13-16 2021 In press
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2020

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- C₂₁₈ V. Beiu, V. Dragoi, and R.-M. Beiu
Why Reliability for Computing Needs Rethinking
IEEE International Conference on Rebooting Computing ICRC 2020
Virtual conference, December 1-3, 2020 16–25
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- C₂₁₇ R.-M. Beiu, S. Hoara, and V. Beiu
And Now This: Hammocks for Quantum and Photonics
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- C₂₁₅ R.-M. Beiu, V. Dragoi, and V. Beiu
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- C₂₁₄ V. Dragoi, and V. Beiu
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- C₂₁₁ S.R. Cowell, S. Hoara, and V. Beiu
Experimenting with Beta Distributions for Approximating Hammocks' Reliability *Best Paper Award*
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In I. Dzitac et al. (Eds.): ICCCC 2020, SpringerNature, AISC 1243, 2021
https://doi.org/10.1007/978-3-030-53651-0_6
- C₂₁₀ S. Hoara, R.-M. Beiu, and V. Beiu
Investigating Hammock Networks on IBM Q
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- C₂₀₉ S.R. Cowell, M. Nagy, and V. Beiu
Reliability of Two-Terminal Networks Equivalent to Small Optimal Sorting Nets
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- C₂₀₈ V. Dragoi, S.R. Cowell, and V. Beiu
Tight Bounds on the Coefficients of Consecutive k -out-of- $n:F$ Systems
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2018

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- C₂₀₅ V. Dragoi, S.R. Cowell, and V. Beiu
Ordering Series and Parallel Compositions
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