Joel Joseph Sacro Marciano Jr., PhD
Associate Professor
Professor Emeritus Norberto S. Vila Professorial Chair
Department of Electrical and Electronics Engineering
College of Engineering, University of the Philippines Diliman

Business Address

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City, State, Zip	**Quezon City, N/A, 1101**	Mail Code	**N/A**
E-mail address:	**joel@eee.upd.edu.ph**		
Date of Birth:	**November 2, 1972**		

Areas of Research Interest

- Wireless Communications
  - Smart antennas, beamforming and interference cancellation
  - Diversity, spatial equalization and MIMO
- RF/Microwave Circuits
- Radio Frequency Identification

Education

School, college, university, or hospital (internship, residency, or fellowship)	Dates of attendance	Location	Major subject or field	Degrees or certificates	Year
❑ **University of the Philippines**	**06/1989-04/1994**	**Diliman, Quezon City, Philippines**	**Electrical Engineering**	**BS**	**1994**
❑ **University of New South Wales**	**07/1996-06/2000**	**Sydney, NSW, Australia**	**Electrical Engineering**	**PhD**	**2001**

Post-doctoral and visiting appointments

● Visiting Associate Research Scientist, Department of Electrical and Computer Engineering, Jacobs School of Engineering, University of California San Diego (UCSD) May 2007 to July 2007. Collaborators: Prof. Kenneth Yun, Prof. Rene Cruz. *Worked on implementation and testing of radio frequency (RF) components and hardware for the High Sensitivity Radio Project.*

● Dado Banatao Fellow 2004-2005. Visiting scholar at the Berkeley Wireless Research Center (BWRC), University of California Berkeley from June 2004 to December 2004. Host: Prof. Jan Rabaey. *Worked on a beamforming algorithm prototype on the Multi-Carrier, Multi-Antenna (MCMA) and Berkeley Emulation Engine (BEE) wireless testbed*

● UP Postdoctoral Research Fellow 2005. Visiting scholar at the Electrical and Computer Engineering Department of the University of California San Diego (UCSD) from January 2005 to April 2005. Host: Prof. Rene Cruz. *Worked on the development of a testbed for a novel algorithm for enhancing packet detection in low-SNR environments*

● Visiting professor at Tallwood Venture Capital in Palo Alto, CA in May 2005

● JSPS Fellow, Japan Society for the Promotion of Science (JSPS) 2003. Research visitor at the Tokyo Institute of Technology, Japan from October-November 2003. Host: Prof. Jun-ichi Takada

Courses Taught

Undergraduate:
ECE141 Digital Communications, EEE107 Communication Systems I, EEE23 Electromagnetics I, EE197 Simulation of Communication Systems, EEE34 Instrumentation Laboratory, ECE153 Wireless Communications, ECE187 Microstrip Theory and Techniques

Graduate:
EE270 Digital Communications I, EE370 Digital Communications II, EE274 Digital Signal Processing I, EE374 Digital Signal Processing II, EE298N Adaptive Filters and Array Processing, EE298V Wireless Communications, EE217 Electromagnetics II, EE271 Microwave Techniques

Previous Applicable Employment

Period of employment From/To	Institution, firm or organization of employment	Location	Rank, title, or position
06/2006- Present	**EEE Department, University of the Philippines**	**Diliman, Quezon City, Philippines**	**Associate Professor**
11/2003-May 2004	**EEE Department, University of the Philippines**	**Diliman, Quezon City, Philippines**	**Assistant Chairman**
06/2002-05/2006	**EEE Department, University of the Philippines**	**Diliman, Quezon City, Philippines**	**Assistant Professor**
01/2003-07/2003	**Advanced Science and Technology Institute**	**Diliman, Quezon City, Philippines**	**Consultant**
03/2001-Present	**Eazix/IMI**	**Alabang, Muntinlupa City, Philippines**	**Consultant**
03/2001-05/2001	**Advanced Science and Technology Institute**	**Diliman, Quezon City, Philippines**	**Consultant**
03/1997-06/2000	**School of Eletrical Engineering and Telecommunications, University of New South Wales**	**Sydney, NSW, Australia**	**Graduate Research Assistant**
06/1994-04/1996	**EEE Department, University of the Philippines**	**Diliman, Quezon City, Philippines**	**Instructor**

Awards received
– 2008 Gawad Chanselor for Natatatanging Guro (Chancellor's Award for Outstanding Teacher), University of the Philippines Diliman
– Most Innovative and Best Business Plan Award, Philippine Emerging Startups Open 2006 (PESO 2006), January 2007.
– Most Outstanding Instructor, College of Engineering, University of the Philippines Diliman, November 1995
– 1st Place, Most Outstanding Undergraduate Research Competition, College of Engineering, University of the Philippines Diliman April 1994.

Publications
● M. Amde, J. Shim, J. S. Marciano Jr., K. Yun and Rene Cruz, "A Low SINR Synchronization System for Direct Sequence Spread-Spectrum Communications: VLSI Architecture, Radio Prototype, Verification Testbed, and Experimental Results", *Submitted* to the 4th IEEE International Conference on Testbeds and Research Infrastructures for the Development of Networks (TRIDENTCOM 2008), March 18-20, 2008, Hotel Grauer Baer, Innsbruck, Austria. (UNDER REVIEW)
● G.N.D. Fadera, L.R.T. Ignacio, M.B.R. Nastor, P.I.M. Urriza and J.S. Marciano, Jr., (2007) "FPGA Implementation of Space-Time Encoders for Wireless Communications", Proc. 2007 International Conference on Intelligent and Advanced Systems (ICIAS 2007), November 25-28, 2007, KL Convention Center, Kuala Lumpur, Malaysia. (CONFERENCE PROCEEDINGS)
● T. W. Tai and J.S. Marciano, Jr. (2007), "A Study on the Application of Adaptive Minimum Bit Error Rate Algorithms for WCDMA", Proc. IEEE Region 10 Conference (TENCON 2007), October 30 to November 2, 2007. Taipei, Taiwan. (CONFERENCE PROCEEDINGS)
● Guevara, R.C.L., de Leon, F. and J.S. Marciano Jr. (2007). "An Academic Perspective on the Philippine Telecommunications Industry", Proc. 2007 International Conference on Telecommunications, Industry and Regulatory Development (ICTIR 2007), August 19-21, 2007, Bangkok, Thailand. (CONFERENCE PROCEEDINGS)
● L. Lanante Jr. and J.S. Marciano, Jr., "Performance of a Reduced Complexity Algorithm for Diversity Combining" (2007), Proc. 3rd IEEE International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM) 2007, September 21-23, 2007, Shangai, China. (CONFERENCE PROCEEDINGS)
● F. de Leon, and J.S Marciano, Jr., "Source Localization using MUSIC in a Multipath Environment" (2007), Proc. 9th International Conference on Advanced Communication Technology Volume 2, Feb. 2007 Page(s):1327 – 1329, Phoenix Park, Korea. (CONFERENCE PROCEEDINGS)
● F. de Leon and J. S. Marciano Jr., "Application of MUSIC, ESPRIT and SAGE Algorithms for Narrowband Signal Detection and Localization" (2006), Proc. IEEE Region 10 Conference (TENCON 2006), November 14-17, 2006. Hongkong, SAR. China. (CONFERENCE PROCEEDINGS)
● P. J. Co and J. S. Marciano Jr., "Selection Diversity Multi-Beamformer Testbed" (2006), Proc. IEEE Region 10 Conference (TENCON 2006), November 14-17, 2006. Hongkong, SAR. China. (CONFERENCE PROCEEDINGS)
● R. Soriano and J. S. Marciano Jr., "The Effect of Signal Distortion Techniques for PAPR Reduction on the BER performance of the LDPC and Turbo Coded OFDM System" (2006), Proc. IEEE Region 10 Conference (TENCON 2006), November 14-17, 2006. Hongkong, SAR. China. (CONFERENCE PROCEEDINGS)
● M. Amde, J.S.Marciano, Jr., K. Yun and Rene Cruz, Code Acquisition at Low SINR in Spread Spectrum Communications" (2006), INVITED PAPER. 9th International Symposium on Spread Spectrum Techniques and its Applications. August 28-31, 2006, Manaus-Amazon, Brazil. (CONFERENCE PROCEEDINGS)
● M. Amde, J.S.Marciano, Jr., S. Singh, C. Akin, Rene Cruz and Kenneth Yun, "Packet Detection and Acquisition at Low SINR in Spread-Spectrum Based Wireless Communications" (2006), Proc. 2006 IEEE Wireless Communications and Networking Conference (WCNC)., Las Vegas, NV, April 3-6, 2006. (CONFERENCE PROCEEDINGS)
● I. Garcia and J.S. Marciano, Jr., "Normalized Adaptive Minimum Bit-Error-Rate Beamformers" (2004), Proc. IEEE Region 10 Conference (TENCON 2004), Nov. 2004, Bangkok, Thailand. (CONFERENCE PROCEEDINGS)
● E. Umali, R. Cajote and J.S. Marciano, Jr., "Performance of the Differential Space-Time Block Code Modulation for the Wideband CDMA System" (2004), Proc. IEEE Region 10 Conference (TENCON 2004), Nov. 2004, Bangkok, Thailand. (CONFERENCE PROCEEDINGS)

● L. Y. Materum and J.S.Marciano, Jr., "Wideband Processing Capability of a Tapped Delay Line Beamformer Antenna Array" (2003), Proc. 2003 IEEE Topical Conference on Wireless Communication Technology (TCWCT2003), October 15-17, 2003, Honolulu, HI. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr. and T.B.Vu, "On the Rank Reduction Property of Wideband FIBs" (2002),Proc. 2002 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2002), May 13-17 2002, Orlando, Florida. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr. and T.B.Vu, "Broadband Frequency Invariant Beamformer Using Frequency Sampling FIR" (2000), Proc. 2000 Progress in Electromagnetics Research Symposium (PIERS00), July 5-14, 2000, Cambridge, Massachusetts, USA. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr. and T.B.Vu, "Reduced Complexity Beam Space Broadband Frequency Invariant Beamforming" (2000), Electronics Letters, vol.36, no.7, March 2000. (ISI JOURNAL)

● J.S.Marciano, Jr. and T.B.Vu, "Reduced Complexity MVDR Broadband Beam Space Beamforming under Frequency Invariant Constraint" (2000), Proc. 2000 IEEE International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting (APS2000), July 16-21, 2000, Salt Lake City, UT, USA. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr. and T.B.Vu, "Implementation of a Broadband Frequency Invariant Beamformer using the Two- Dimensional Discrete Fourier Transform" (1999), Proc. of IEEE International Symposium on Intelligent Signal Processing and Communications Systems (ISPACS99), December 8-10, 1999. Phuket, Thailand. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr., H. Mehrpour and T.B.Vu, "Adaptive Control of a Broadband Array Using Frequency Independent Coefficients" (1999), Proc. Fifth International Symposium on Signal Processing and its Applications (ISSPA99), August 22-25, 1999, Brisbane QLD Australia. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr., and T.B.Vu, "Novel Lagrange Polynomial-Based FIR Structure For Broadband Spatial Nulling" (1999), Proc. of 6th Australian Symposium on Antennas (ASA99), February 17-18, 1999. CSIRO Telecommunications and Industrial Physics, Sydney, NSW, Australia. (CONFERENCE PROCEEDINGS)

● J.S.Marciano, Jr. and T.B.Vu, "Two-Dimensional Beam Space Equalisation Techniques for Mobile Communications" (1998), Proc. 4th International Conference on Signal Processing (ICSP98), October 12-16, 1998. Beijing, China. (CONFERENCE PROCEEDINGS)

● B. Xu, J.S. Marciano, Jr. and T.B. Vu, "Performance Enhancement of Space-Time Constant Modulus Array for Smart Antenna Applications" (1998), Proc. 41st IEEE Midwest Symposium on Circuits and Systems (MWSCAS98), August 9-12, 1998. University of Notre Dame, Notre Dame IN, USA.(CONFERENCE PROCEEDINGS)

Grants

● Program Leader, "Disaster Risk Management Using Networks and Computing: Monitoring of Landslides, Slope Failures and Debris Flows". Approved for funding (1st year) by the Department of Science and Technology (DOST) Grants-in-Aid (2008-2009).

● Principal Investigator, "Creative Antenna Designs for RFID in Smart Shelf Technology".

● Principal investigator, "Warehouse Inventory Management Through RFID Innovation".

● Program Leader, The Digital Provide: Bridging Rural Communities Through Emerging, Disruptive and Sustaining Information Technologies. Grant funded by the UP Diliman Open Grant (OVCRD)

● Professor Emeritus Norberto Vila Professorial Chair (2007-2008). Research: Low Complexity Diversity Combining Schemes for Wireless Personal Area Networks

● Project Leader, Physical Testbed for Wireless Communications Systems. Grant funded by Office of the Vice- Chancellor for Research and Development, UP Diliman (2003-2004). (completed)

● Proponent, Telecommunications Systems Instructional Laboratory Modernization. Grant funded by UP System (2002-2003) (completed)

University Service (Including Academic Senate, Departmental, College, University-wide).

❑ Member, University Committee on Emerging Fields in S&T

❑ Working with the Office of Senator Edgardo J. Angara as technical advisor for the Congressional Committee on Science, Technology and Engineering (COMSTE)

❑ Chair, EEE Department Academic Personnel Committee (11/01-5/2004)

❑ Chair, Curriculum Review Committee of BS Electronics and Communications Engineering (04/03-10/03)

❑ General Chair, 3rd, 5th and 6th National Electronics and Communications Engineering Conference

❑ Section Chair, IEEE Philippines Section

❑ Branch Counselor, UP IEEE Student Branch (06/02-Present)

❑ Faculty Adviser, UP Beta Epsilon Fraternity (2001-2003)

❑ Faculty Adviser, Institute of Electronics and Communications Engineers of the Philippines, UP Student Chapter (2003)

❑ Consulted by University officials on UP police radio equipment and network and the PABX system

Memberships (Scholarly societies, professional boards, civic organizations, etc.).

❑ Member, ASEAN Engineer Registry (ASEAN Engineer, conferred December 10, 2005 in Vientiane, Laos)

❑ Member, Institute of Electrical and Electronics Engineers (IEEE)

❑ Member, Institute for Electronics, Information and Communications Engineers (IEICE)

❑ Life Member, Institute for Electronics and Communications Engineers of the Philippines (IECEP)

❑ Associate Member, National Research Council of the Philippines (NRCP)