

# CURRICULUM VITAE - Nenad Vukmirović

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## CONTACT INFORMATION

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## EDUCATION

- **(2007–Present)** Postdoctoral Fellow, Lawrence Berkeley National Laboratory.
- **(2004–2007)** PhD in Quantum Electronics, School of Electronic and Electrical Engineering, University of Leeds, Leeds, UK.  
**Thesis:** Physics of intraband quantum dot optoelectronic devices.
- **(1999–2003)** BSc in Physics, University of Belgrade, Belgrade, Serbia, Faculty of Physics, section Theoretical and Experimental Physics, GPA 10.0 (out of 10) – Valedictorian.  
**Thesis:** Determination of ground state of  $H_2^+$  molecule ion using diffusion Monte Carlo method.
- **(1999–2004)** BSc in Electrical Engineering, University of Belgrade, Belgrade, Serbia, Faculty of Electrical Engineering, section Physical Electronics – Optoelectronics and Laser Engineering, GPA 9.8 (out of 10) – among top 2%.  
**Thesis:** Optically pumped terahertz laser based on intersubband transitions in a GaN/AlGaIn double quantum well.

## RESEARCH EXPERIENCE

- Plane-wave calculations of the electronic structure of quantum dots within the framework of  $k \cdot p$  model.
- Exploiting the symmetry of the quantum dot system in electronic structure calculations.
- Configuration interaction method for few electron states in quantum dots.
- Strain in nanostructures - continuum mechanical and atomistic models.
- Empirical pseudopotential modelling of the electronic structure of semiconductors.
- Nonequilibrium Green's function theory (in the self-consistent Born approximation) of transport and interaction with electromagnetic radiation in low dimensional semiconductor structures.
- Boltzmann equation based transport in cascades of semiconductor quantum dots or wells – modelling of different interaction mechanisms, such as electron phonon, ionized impurity, interface roughness, alloy disorder.
- Development of computational software (in Fortran) implementing the above techniques and its applications to modelling and design of optoelectronic devices, such as quantum dot infrared photodetectors, quantum dots-in-a-well detectors, optically pumped intraband lasers, quantum cascade lasers.

## HONORS AND AWARDS

- at postgraduate level:
  - **(2006)** IEEE Lasers and Electrooptics Society Graduate Student Fellowship.
  - **(2005/2006 and 2006/2007)** IEE Leslie H. Paddle Fellowship for *postgraduate research which will further the art, science or practice of electronic or radio engineering.*
- at undergraduate level:
  - **(2003/2004)** *Student of generation* award for the best student in generation at the Faculty of Physics.
  - **(2002 and 2003)** Awards for the best student at the Department of Physical Electronics at the Faculty of Electrical Engineering.

- **(2001/2002 and 2002/2003)** Awards for the best student at the Faculty of Physics.
- **(February 2003)** Serbian Royal Family Karadjordjević Award for one of 100 best university students in Serbia, Montenegro and Republic of Srpska.
- **(September 2002)** Royal Norwegian Government Award for one of 500 best students in Serbia.
- at high school level
  - **(1996-1999)** Gold medal at 30th International Physics Olympiad (Padua, Italy, July 1999) and numerous awards at Republic and Federal competitions in physics and mathematics.

#### SCHOLARSHIPS

- **(2004–Present)** Overseas Research Students (ORS) award, University of Leeds Tetley-Lupton Award and the Maintenance grant from the School of Electronic and Electrical Engineering which funded my PhD studies.
- **(1999–2004)** Ministry of Science and Technology, Government of Republic of Serbia.
- **(1996–1999)** Republic Foundation for Development of Scientific and Art Youth.

#### EMPLOYMENT

- **(2005–Present)** Lab demonstrator and Exam chief invigilator, School of Electronic and Electrical Engineering, University of Leeds, Leeds, UK.
- **(2005/2006)** Subwarden at Montague Burton Residences.
- **(2004–2006)** Member of the editorial board of *Young physicist* – journal for elementary and high school physics students published by Serbian Physics Society.
- **(1999–2004)** Mathematical High School, Belgrade – preparing students for high school competitions in physics.
- **(Summer 2003)** Summer student program at DESY/HASYLAB (Deutsches Elektronen Synchrotron), Hamburg, Germany.
- **(2000–2004)** Petnica Science Center – Junior Associate at courses of Applied Physics and Electronics.

#### MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Referee for Physical Review B, Physical Review Letters (APS), Journal of Applied Physics, Applied Physics Letters (AIP), IEEE Journal of Selected Topics in Quantum Electronics, Electronics Letters (IEE), Nanotechnology, Semiconductor Science and Technology, Journal of Physics: Condensed Matter, New Journal of Physics, and Journal of Physics D: Applied Physics (IoP).
- Member of IoP, IEEE-LEOS, and IEE.

#### COLLABORATION WITH OTHER INSTITUTIONS

- **(August 2006)** a visit to Computational Materials Science Group, CCLRC Daresbury Laboratory, Warrington, UK.
- **(August–September 2005)** a visit to Electronic Materials Engineering Department, Research School of Physical Sciences and Engineering, The Australian National University, Canberra.
- **(2005-2007)** supervisor of two Diploma thesis at the Faculty of Electrical Engineering, University of Belgrade.

#### LANGUAGES

- Serbian – excellent (mother tongue).
- English – excellent.
- French – good.

## REFERENCES

- Paul Harrison BSc, PhD, FIET, FInstP, SenMemIEEE, CPhys  
Professor of Quantum Electronics and Head of School,  
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- Dr Dragan Indjin,  
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- Dr Stanko Tomic,  
Senior Research Scientist,  
Computational Materials Science Group,  
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## List of publications - Nenad Vukmirović (January 2008)

- **22 research papers** in peer reviewed international journals (not including conference proceedings issues), **8 papers** in conference proceedings issues of peer reviewed journals, more than **40 publications** on international conferences
- Papers in peer reviewed journals (not including conference proceedings issues):
  1. **N. Vukmirović**, D. Indjin, V. D. Jovanović, Z. Ikonić, and P. Harrison, "Symmetry of  $k \cdot p$  Hamiltonian in pyramidal InAs/GaAs quantum dots: Application to the calculation of electronic structure", *Phys. Rev. B* **72**, 075356 (2005).
  2. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Symmetry-based calculation of single-particle states and intraband absorption in hexagonal GaN/AlN quantum dot superlattices", *J. Phys.: Condens. Matter* **18**, 6249 (2006).
  3. **N. Vukmirović**, Z. Ikonić, V. D. Jovanović, D. Indjin, and P. Harrison, "Optically pumped intersublevel mid-infrared lasers based on InAs/GaAs quantum dots", *IEEE J. Quantum Electron.* **41**, 1361 (2005).
  4. **N. Vukmirović**, Ž. Gačević, Z. Ikonić, D. Indjin, P. Harrison, and V. Milanović, "Intraband absorption in InAs/GaAs quantum dot infrared photodetectors - effective mass vs.  $k \cdot p$  modelling", *Semicond. Sci. Technol.* **21**, 1098 (2006).
  5. **N. Vukmirović**, D. Indjin, Z. Ikonić, and P. Harrison, "Origin of detection wavelength tuning in quantum-dots-in-a-well infrared photodetectors", *Appl. Phys. Lett.* **88**, 251107 (2006).
  6. **N. Vukmirović**, Z. Ikonić, I. Savić, D. Indjin, and P. Harrison, "A microscopic model of electron transport in quantum dot infrared photodetectors", *J. Appl. Phys.* **100**, 074502 (2006).
  7. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Quantum transport in semiconductor quantum dot superlattices: electron-phonon resonances and polaron effects", *Phys. Rev. B* **76**, 245313(2007).
  8. **N. Vukmirović**, D. Indjin, Z. Ikonić, and P. Harrison, "Electron transport and terahertz gain in quantum dot cascades", *IEEE Photonics Tech. Lett* **20**, 129 (2008).
  9. **N. Vukmirović**, V. D. Jovanović, D. Indjin, Z. Ikonić, P. Harrison, and V. Milanović, "Optically pumped terahertz laser based on intersubband transitions in a GaN/AlGaIn double quantum well", *J. Appl. Phys.* **97**, 103106 (2005).
  10. P. Aivaliotis, **N. Vukmirović**, E. A. Zibik, J. W. Cockburn, L. R. Wilson, D. Indjin, P. Harrison, C. Groves, J. P. R. David, and M. Hopkinson, "Stark shift of the spectral response in quantum dots-in-a-well infrared photodetectors", *J. Phys. D: Appl. Phys.* **40**, 5537 (2007).
  11. I. Savić, Z. Ikonić, V. Milanović, **N. Vukmirović**, V. D. Jovanović, D. Indjin, and P. Harrison, "Electron transport in quantum cascade lasers in a magnetic field", *Phys. Rev. B* **73**, 075321 (2006).
  12. S. Barik, H. H. Tan, C. Jagadish, **N. Vukmirović**, and P. Harrison, "Selective wavelength tuning of self-assembled InAs quantum dots grown on InP", *Appl. Phys. Lett.* **88**, 193112 (2006).
  13. I. Savić, Z. Ikonić, **N. Vukmirović**, D. Indjin, P. Harrison, and V. Milanović, "Design of a ZnMnSe/ZnMgSe spin-polarized terahertz quantum cascade laser tunable by magnetic field", *Appl. Phys. Lett.* **89**, 011109 (2006).
  14. V. D. Jovanović, S. Höfling, D. Indjin, **N. Vukmirović**, Z. Ikonić, P. Harrison, J. P. Reithmaier, and A. Forchel, "Influence of doping density on electron dynamics in GaAs/AlGaAs quantum cascade lasers", *J. Appl. Phys.* **99**, 103106 (2006).

15. L. Fu, H. H. Tan, I. McKerracher, J. Wong-Leung, C. Jagadish, **N. Vukmirović**, and P. Harrison, "Effects of rapid thermal annealing on device characteristics of InGaAs/GaAs quantum dot infrared photodetectors", *J. Appl. Phys.* **99**, 114517 (2006).
  16. S. Höfling, V. D. Jovanović, D. Indjin, J. P. Reithmaier, A. Forchel, Z. Ikonić, **N. Vukmirović**, P. Harrison, A. Mirčetić, and V. Milanović, "Dependence of saturation effects on electron confinement and injector doping in GaAs/Al<sub>0.45</sub>Ga<sub>0.55</sub>As quantum-cascade lasers", *Appl. Phys. Lett.* **88**, 251109 (2006).
  17. I. Savić, V. Milanović, **N. Vukmirović**, V. D. Jovanović, Z. Ikonić, D. Indjin, and P. Harrison, "Magnetic-field tunable terahertz quantum well infrared photodetector", *J. Appl. Phys.* **98**, 084509 (2005).
  18. V. D. Jovanović, D. Indjin, **N. Vukmirović**, Z. Ikonić, P. Harrison, E. H. Linfield, H. Page, X. Marcadet, C. Sirtori, C. Worrall, H. E. Beere, D. A. Ritchie, "Mechanisms of dynamic range limitations in GaAs/AlGaAs quantum cascade lasers: Influence of injector doping", *Appl. Phys. Lett.* **86**, 211117 (2005).
  19. D. Indjin, Z. Ikonić, V. D. Jovanović, **N. Vukmirović**, P. Harrison, and R. W. Kelsall, "Relationship between carrier dynamics and temperature in terahertz quantum cascade structures: simulation of GaAs/AlGaAs, SiGe/Si and GaN/AlGaAs devices", *Semicond. Sci. Technol.* **20**, S237 (2005).
  20. I. Savić, **N. Vukmirović**, Z. Ikonić, D. Indjin, R. W. Kelsall, P. Harrison, and V. Milanović, "Density matrix theory of transport and gain in quantum cascade lasers in a magnetic field", *Phys. Rev. B* **76** 165310 (2007).
  21. L. Fu, I. McKerracher, H. H. Tan, C. Jagadish, **N. Vukmirović**, and P. Harrison, "Effect of GaP strain compensation layers on rapid thermally annealed InGaAs/GaAs quantum dot infrared photodetectors grown by metal-organic chemical-vapor deposition", *Appl. Phys. Lett.* **91**, 073515 (2007).
  22. I. Savić and **N. Vukmirović**, "Intraband magneto-optical properties of magnetic quantum dots", *Phys. Rev. B* **76**, 245307 (2007).
- Papers in conference proceedings issues of peer reviewed journals:
    1. **N. Vukmirović**, Z. Ikonić, I. Savić, D. Indjin, and P. Harrison, "Theoretical modelling of electron transport in InAs/GaAs quantum dot superlattices", *Phys. Status Solidi C* **3**, 3770 (2006).
    2. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Symmetry based calculation of electronic structure and intraband absorption in GaN/AlN hexagonal quantum dot superlattices", *Phys. Status Solidi C* **3**, 3939 (2006).
    3. I. Savić, Z. Ikonić, **N. Vukmirović**, V. Milanović, D. Indjin, and P. Harrison, "Lasing in spin-polarized terahertz quantum cascade structures", *Phys. Status Solidi C* **3**, 4401 (2006).
    4. D. Indjin, S. Höfling, A. Mirčetić, V. D. Jovanović, J. Radovanović, Z. Ikonić, **N. Vukmirović**, P. Harrison, R. W. Kelsall, V. Milanović, J. P. Reithmaier, and A. Forchel, "Comparative analysis of  $\lambda \approx 9\mu\text{m}$  GaAs/AlGaAs quantum cascade lasers with different injector doping", *Mat. Sci. Forum* **518**, 29 (2006).
    5. S. Höfling, D. Indjin, V. D. Jovanović, A. Mirčetić, J. P. Reithmaier, A. Forchel, Z. Ikonić, **N. Vukmirović**, P. Harrison, V. Milanović, "Influence of injector doping density and electron confinement on the properties of GaAs/Al<sub>0.45</sub>Ga<sub>0.55</sub>As quantum cascade lasers", *Phys. Status Solidi C* **3**, 411 (2006).
    6. P. Harrison, D. Indjin, V. D. Jovanović, A. Mirčetić, Z. Ikonić, R.W. Kelsall, J. McTavish, I. Savić, **N. Vukmirović** and V. Milanović, "Carrier Dynamics in Quantum Cascade Lasers", *Acta Physica Polonica A* **107**, 75 (2005).

7. P. Harrison, D. Indjin, V. D. Jovanović, A. Mirčetić, Z. Ikonić, R. W. Kelsall, J. McTavish, I. Savić, **N. Vukmirović**, and V. Milanović, "A physical model of quantum cascade lasers: Application to GaAs, GaN and SiGe devices", *Phys. Status Solidi A* **202**, 980 (2005).
  8. N. Vukmirović and S. Tomić, "An efficient method for multi-band plane wave CI calculations in semiconductor QD's", *Physica E*, in press.
- Invited seminars given:
    1. "Optically pumped lasers based on quantum wells and quantum dots", Centre for Nanostructures, Nanoelectronics and Nanophotonics (C3N) seminar series, Faculty of Electrical Engineering, University of Belgrade, 20 December 2004.
    2. "Theoretical modelling of quantum dot intraband optoelectronic devices", Computational Materials Science Group seminar series, CCLRC Daresbury Laboratory, Warrington, UK, 23 August 2006.
    3. "Electronic, optical and transport properties of quantum dot intraband devices", Scientific Computing Seminars, Lawrence Berkeley National Laboratory, Berkeley, US, 14 May 2007.
    4. "Quantum dot intraband optoelectronic devices", Faculty of Physics, University of Belgrade, 26 September 2007.
  - Conference publications:
    1. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Quantum transport in quantum dot cascade structures", The 9th International Conference on Intersubband Transitions in Quantum Wells, Ambleside, UK, 9 - 14 September 2007.
    2. **N. Vukmirović**, D. Indjin, Z. Ikonić, I. Savić, V. D. Jovanović and P. Harrison, "Theory of Quantum Dot Intraband Optoelectronic Devices", XVII Symposium on Condensed Matter Physics, Vršac, Serbia, 16-20 September 2007.
    3. **N. Vukmirović** and S. Tomić, "An efficient method for multi-band plane wave CI calculations in semiconductor QD's", The 13th International Conference on Modulated Semiconductor structures, Genova, Italy, 15-20 July 2007.
    4. **N. Vukmirović**, Z. Ikonić, I. Savić, D. Indjin, and P. Harrison, "Carrier transport in quantum dot infrared photodetectors", One day quantum dot meeting, Nottingham, UK, 19 January 2007.
    5. P. Harrison, D. Indjin, Z. Ikonić, I. Savić, C. A. Evans, **N. Vukmirović**, and J. McTavish, "On the incoherence of quantum transport in semiconductor heterostructure optoelectronic devices", The Sixth International Conference on Low Dimensional Structures and Devices, San Andres, Colombia, 15-20 April 2007.
    6. I. Savić, **N. Vukmirović**, Z. Ikonić, D. Indjin, R. W. Kelsall, P. Harrison, and V. Milanović, "Density matrix description of transport and gain in quantum cascade lasers in a magnetic field", The 9th International Conference on Intersubband Transitions in Quantum Wells, Ambleside, UK, 9 - 14 September 2007.
    7. P. Aivaliotis, **N. Vukmirović**, E. A. Zibik, D. Indjin, J. W. Cockburn, P. Harrison, C. Groves, J. P. R. David, M. Hopkinson, and L. R. Wilson, "Experimental and theoretical investigation of the spectral Stark shift in quantum dots-in-a-well infrared photodetectors", The 9th International Conference on Intersubband Transitions in Quantum Wells, Ambleside, UK, 9 - 14 September 2007.
    8. P. Moontragoon, **N. Vukmirović**, Z. Ikonić, and P. Harrison, "Optical Properties of Si-Ge-Sn Quantum dots", Quantum Dot Optoelectronic Symposium, Limassol, Cyprus, 14-16 November 2007.
    9. P. Harrison, D. Indjin, I. Savić, Z. Ikonić, C. Evans, **N. Vukmirović**, R. W. Kelsall, J. McTavish, V. Milanović, "On the coherence/incoherence of electron transport in semiconductor heterostructure optoelectronic devices", SPIE Photonics West, San Jose, US, 19-24 January 2008.

10. S. Tomić and **N. Vukmirović**, Plane wave methodology for electronic structure of single quantum dots, Theory, Modelling and Computational Methods for Semiconductor Materials and Nanostructures, Manchester, UK, 31 January - 1 February 2008.
11. **N. Vukmirović**, Z. Ikonić, D. Indjin, V. D. Jovanović, and P. Harrison, "Design and simulation of an optically pumped intraband InAs/GaAs quantum dot laser", Semiconductor and integrated opto-electronics conference, Cardiff, Wales, UK, 10-12 April 2006.
12. **N. Vukmirović**, Z. Ikonić, I. Savić, D. Indjin, and P. Harrison, "Theoretical modelling of electron transport in InAs/GaAs quantum dot superlattices", The 4th International Conference on Quantum Dots, Chamonix-Mont Blanc, France, 1-5 May 2006.
13. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Symmetry based calculation of electronic structure and intraband absorption in GaN/AlN hexagonal quantum dot superlattices", The 4th International Conference on Quantum Dots, Chamonix-Mont Blanc, France, 1-5 May 2006.
14. **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "The use of hexagonal symmetry for the calculation of single-particle states in III-nitride quantum dots", The 14th International Symposium - Nanostructures: Physics and Technology, St. Petersburg, Russia, 26-30 June 2006.
15. **N. Vukmirović**, D. Indjin, Z. Ikonić, and P. Harrison, "Theoretical modelling of the effect of well width on the absorption spectrum of quantum dots-in-a-well infrared photodetectors", Quantum Electronics and Photonics QEP-17, Manchester, UK, 4-7 September 2006.
16. **N. Vukmirović**, Z. Ikonić, I. Savić, D. Indjin, and P. Harrison, "Theoretical modelling of quantum dot infrared photodetectors", The 210th Meeting of The Electrochemical Society, Cancun, Mexico, 29 October-3 November 2006.
17. G. Jolley, L. Fu, H. H. Tan, C. Jagadish, **N. Vukmirović**, and P. Harrison, "Quantum dots-in-a-well infrared photodetectors grown by MOCVD", International Conference on Nanoscience and Nanotechnology, Brisbane, Australia, 3-7 July 2006.
18. S. Barik, H. H. Tan, C. Jagadish, **N. Vukmirović**, and P. Harrison, "The Emission Wavelength Tailoring of Self-assembled InAs/InP Quantum Dots Grown on GaInAsP and InP Buffers", MRS Fall Meeting, Boston, USA, 27 November - 1 December 2006.
19. P. Harrison, D. Indjin, V. D. Jovanović, Z. Ikonić, R. W. Kelsall, I. Savić, J. McTavish, C. A. Evans, **N. Vukmirović**, and V. Milanović, "Theoretical modelling and design of mid-infrared and terahertz quantum cascade lasers and quantum well infrared photodetectors", The 16th Ural Winter School on the Physics of Semiconductors, Ekaterinsburg, Russia, February 2006.
20. I. Savić, Z. Ikonić, **N. Vukmirović**, V. Milanović, D. Indjin, and P. Harrison, "Lasing in spin-polarized terahertz quantum cascade structures", The 4th International Conference on Physics and Applications of Spin-Related Phenomena in Semiconductors, Sendai, Japan, 15-18 August 2006.
21. P. Harrison, Z. Ikonić, **N. Vukmirović**, D. Indjin, and V. D. Jovanović, "On the incoherence of quantum transport in semiconductor heterostructure optoelectronic devices", The 10th Biennial Baltic Electronic Conference, Tallinn, Estonia, 2-4 October 2006.
22. **N. Vukmirović**, D. Indjin, V. D. Jovanović, Z. Ikonić, and P. Harrison, "Design of an optically pumped intersublevel laser based on InAs/GaAs quantum dots", The 8th International Conference on Intersubband Transitions in Quantum Wells, Cape Cod, USA, 11-16 September 2005.
23. **N. Vukmirović**, D. Indjin, V. D. Jovanović, and P. Harrison, "Application of symmetry in  $k \cdot p$  calculations of the electronic structure of pyramidal self-assembled InAs/GaAs quantum dots", The 13th International Symposium - Nanostructures: Physics and Technology, St. Petersburg, Russia, 20-25 June 2005.

24. **N. Vukmirović**, V. D. Jovanović, D. Indjin, Z. Ikonić, P. Harrison, and V. Milanović, "Quantum fountain terahertz laser based on intersubband transitions in a GaN/AlGaIn double quantum well", UK Nitrides Consortium, Nottingham, UK, 14 June 2005.
25. **N. Vukmirović**, D. Indjin, V. D. Jovanović, and P. Harrison, "Application of symmetry in  $k \cdot p$  calculations of the electronic structure of pyramidal vertically stacked InAs/GaAs quantum dots", One day quantum dot meeting, Nottingham, UK, 5 April 2005.
26. **N. Vukmirović**, D. Indjin, V. D. Jovanović, P. Harrison, and Ž. Gačević, "Symmetry based  $k \cdot p$  calculations of the electronic structure of pyramidal self-assembled InAs/GaAs quantum dots", The 1st International Workshop on Nanoscience and Nanotechnology, Belgrade, Serbia and Montenegro, 15-18 November 2005.
27. S. Höfling, D. Indjin, V. D. Jovanović, A. Mirčetić, J. P. Reithmaier, A. Forchel, Z. Ikonić, **N. Vukmirović**, P. Harrison, V. Milanović, "Influence of injector doping density and electron confinement on the properties of GaAs/Al<sub>0.45</sub>Ga<sub>0.55</sub>As quantum cascade lasers", International Symposium on Compound Semiconductors, Rust, Germany, 18-22 September 2005.
28. D. Indjin, S. Höfling, A. Mirčetić, V. D. Jovanović, Z. Ikonić, **N. Vukmirović**, P. Harrison, R. W. Kelsall, V. Milanović, J. P. Reithmaier, A. Forchel, " $\lambda \sim 9\mu\text{m}$  GaAs/AlGaAs quantum cascade laser based on double-phonon resonance depopulation mechanism with diagonal optical transitions", The Mid-Infrared Optoelectronics - Materials and Devices conference, Lancaster, UK, 12-14 September 2005.
29. I. Savić, V. Milanović, Z. Ikonić, V. D. Jovanović, **N. Vukmirović**, D. Indjin, and P. Harrison, "A model of quantum cascade lasers in a magnetic field", The 8th International Conference on Intersubband Transitions in Quantum Wells, Cape Cod, USA, 11-16 September 2005.
30. I. Savić, V. Milanović, V. D. Jovanović, **N. Vukmirović**, Z. Ikonić, D. Indjin, and P. Harrison, "Magnetic field tunable Terahertz QWIP", The 8th International Conference on Intersubband Transitions in Quantum Wells, Cape Cod, USA, 11-16 September 2005.
31. V. D. Jovanović, D. Indjin, **N. Vukmirović**, Z. Ikonić, P. Harrison, S. Höfling, J. P. Reithmaier, and A. Forchel, "Influence of injector doping on the performance and electron heating in midinfrared GaAs/AlGaAs quantum cascade lasers", The 8th International Conference on Intersubband Transitions in Quantum Wells, Cape Cod, USA, 11-16 September 2005.
32. D. Indjin, V. D. Jovanović, C. Worrall, H. E. Beere, Z. Ikonić, **N. Vukmirović**, P. Harrison, R. W. Kelsall, E. H. Linfield, H. Page, C. Sirtori, D. A. Ritchie, V. Milanović, S. Tomić, and S. Kočinac, "Electroluminescence from a mid-infrared digitally graded GaAs/AlGaAs quantum cascade structure", The 8th International Conference on Intersubband Transitions in Quantum Wells, Cape Cod, USA, 11-16 September 2005.
33. D. Indjin, S. Höfling, A. Mirčetić, V. D. Jovanović, J. Radovanović, Z. Ikonić, **N. Vukmirović**, P. Harrison, R. W. Kelsall, V. Milanović, J. P. Reithmaier, and A. Forchel, "Comparative analysis of  $\lambda \approx 9\mu\text{m}$  GaAs/AlGaAs quantum cascade lasers with different injector doping", The 7th Yugoslav Materials Research Society Conference, Herceg Novi, Serbia and Montenegro, 12-16 September 2005.
34. V. D. Jovanović, D. Indjin, **N. Vukmirović**, Z. Ikonić, H. Page, C. Sirtori, C. Worrall, H. E. Beere, and D. A. Ritchie, "Effect of injector doping on non-equilibrium electron dynamics in mid-infrared GaAs/AlGaAs quantum cascade lasers", 14th International Conference on Nonequilibrium Carrier Dynamics in Semiconductors, Chicago, USA, 24-29 July 2005.
35. P. Harrison, D. Indjin, V. D. Jovanović, I. Savić, **N. Vukmirović**, J. P. McTavish, R. W. Kelsall, Z. Ikonić, and V. Milanović, "Carrier dynamics in quantum cascade lasers", Latin American Symposium on Solid State Physics, Havana, Cuba, 6-9 December 2004.



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