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|  | Brent Ross Carroll Assistant Professor of Physics  (870)680-4335  bcarroll@astate.edu |  |

### Current Position

Position Title: Assistant Professor of Physics

Current Academic Rank: Assistant Professor

Rank Since: Fall 2011

### Degrees

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| --- | --- |
| Ph.D. | Physics, Texas Tech University, Lubbock, Texas 2010  Dissertation: Muonium in Silicon Germanium Alloys |
| M.S. | Applied Physics, Texas Tech University, Lubbock, Texas 2009 |
| B.S. | Physics, Texas Tech University, Lubbock, Texas 2006 |

### Scholarly Contributions and Creative Productions

Grants

Carroll, B.R. (2012). Titania nanostructures for lunar applications. Arkansas Space Grant Consortium - 2383.

Seok, I., Kemp, B., Dolan, M.C., Hwang, Y., Carroll, B.R., & Engelken, R. (2012). "MRI: Acquisition of a Mask Aligner for Micro/Nano-Fabrication Research at Arkansas State University". National Science Foundation - 299972.

Journal Publications

Carroll, B., Lichti, R., King, P., Celebi, Y., Yonenaga, I., & Chow, K. (2010). Muonium defect levels in Czochralski-grown silicon-germanium alloys. Phys. Rev. B, 82, 205205.

Carroll, B.R., Lichti, R.L., Mengyan, P.W., Baker, B.B., Celebi, Y.G., King, P.J., Chow, K.H., & Yonenaga, I. (2013). Spectroscopic Identification of Shallow Muonium Acceptor States in Si\_0.06Ge\_0.94. Physical Review B – Rapid Communications, Submitted July 2013.

Presentations

Jayarathna, G., Hudy, L., Mengyan, P.W., Baker, B.B., Carroll, B.R., Celebi, Y.G., & Lichti, R.L. (2012). Cyclic Transition Processes for Muonium in SiGe Alloys. Bulletin of the American Physical Society.

Carroll, B.R., & Engelken, R.D. (2012). Thin-film photovoltaics research at Arkansas State University. 20th Annual Arkansas Space Grant Consortium Symposium.

Carroll, B.R. (2011). Characterization of Photovoltaic Thin Films & Materials at ASU. ASSET Initiative 2011 Annual Meeting.

Carroll, B.R., & Engelken, R. (2011). Semiconductor film/nanomaterial research at Arkansas State University. 19th Annual Arkansas Space Grant Consortium Symposium.

Proceedings Publications

Baker, B.B., Celebi, Y.G., Lichti, R.L., Bani-Salameh, H.N., Mengyan, P.W., & Carroll, B.R. (2012). Initial Study of Positively Charged Muonium Motion in ZnO, CdO, TiO2, and SnO2. Physics Procedia, 30, 101-104.

Mengyan, P.W., Celebi, Y.G., Lichti, R.L., Carroll, B.R., Baker, B.B., Bani-Salameh, H.N., & Yonenaga, I. (2012). Longitudinal Muon Spin Depolarization in Ge-Rich SiGe Alloys. Physics Procedia, 30, 214-218.

Newell, M.J., Engelken, R., Hall, J., Mughal, M.A., Felizco, F., Vangilder, J., Thapa, S., McNew, D., Hill, Z., & Carroll, B.R. (2011). Elemental sulfur-based electrodeposition of indium sulfide films. 37th IEEE Photovoltaics Specialists Conference, 1322-1326.

Mengyan, P., Lichti, R., Celebi, Y.G., Carroll, B.R., Baker, B., Bani-Salameh, H., & Yonenaga, I. (2011). Muonium Transitions in Ge-rich SiGe Alloys. Physica B: Condensed Matter / Elsevier,

### Institutional Committees

University

College Assessment Committee (University) Summer 2012

STEM Den Committee (University) Summer 2012

### Teaching

Fall 2010 Courses:

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| --- |
| PHYS 2034 002 - University Physics I |
| PHYS 4553 001 - Principles of Quantum Mechanics |

Spring 2011 Courses:

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| PHYS 2034 001 - University Physics I |
| PHYS 3203 001 - Electromagnetic Theory |

Summer 2011 Courses:

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| --- |
| PHYS 1101 001 - INTRO TO SPACE SCIENCE LAB |
| PHYS 1103 001 - Introduction to Space Science |

Fall 2011 Courses:

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| --- |
| ESCI 613V 2 - CHALCOPYRITE CULNS2 THIN FILMS |
| ESCI 613V 3 - BETA PHASE IN2S3 THIN FILMS |
| ESCI 7121 3 - SEM SOLAR CELL MATERIALS |
| PHYS 2034 002 - University Physics I |
| PHYS 3153 001 - Mechanics |

Spring 2012 Courses:

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| --- |
| PHYS 2034 001 - University Physics I |
| PHYS 2034 002 - University Physics I |

Summer 2012 Courses:

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| --- |
| PHYS 1101 001 - INTRO TO SPACE SCIENCE LAB |
| PHYS 1103 001 - Introduction to Space Science |

Fall 2012 Courses:

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| ESCI 613V 002 - IND RES NANOPOROUS TITANIA |
| PHYS 1101 001 - INTRO TO SPACE SCIENCE LAB |
| PHYS 1103 001 - INTRO TO SPACE SCIENCE |
| PHYS 3272 001 - PHYSICAL INSTRUMENTATION I |
| PHYS 459V 001 - RESEARCH IN PHYSICS |