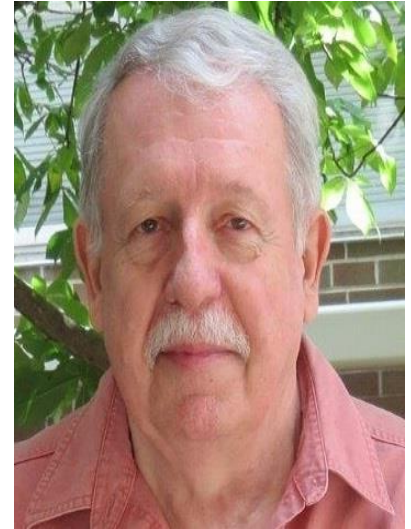


NAME **Gregory Lapicki**
TITLE **Professor**
UNIT **Department of Physics**
Room **E308, Howell Building**
 East Carolina University
 Greenville, NC 27858
PHONE **(252) 328-6894**
E-MAIL Lapickig@ecu.edu



EDUCATION

[Magister Fyzyki, Warsaw University, 1962-67, Physics](#)



[Ph. D., New York University, 1968-75, Physics](#)



POSITIONS and EMPLOYMENT

Post Doc, Radiation and Solid State Laboratory, New York University, 1976-79.

Visiting Assistant Professor, Texas A&M University, 1979-80.

Assistant Professor, Northwestern University of Louisiana, 1980-81.

[Associate Professor, East Carolina University, 1981-1987.](#)



[Professor, East Carolina University, 1988-](#)

HONORS

Fullbright Award, Centro Atómico, Bariloche, Argentina, 1991-92.

[Served on the International Advisory Committee for PIXE \(2013-2017\).](#)

[At PIXE 2017, elected to its International Honorary Committee.](#)

2015 Sigma Xi Research Award, ECU Chapter of Sigma Xi.

RESEARCH/CREATIVE ACTIVITY

Theoretical atomic physics. Inner-shell ionization and energy loss of charged particles in matter. Development of the ECPSSR theory of K-, L-, and M-shell ionization, and its improvement with the ECUSAR theory that is widely used for comparison with x-ray and Auger-electron production cross sections; in particular in PIXE analysis.

Principal publications (from nearly 200 articles)

1. [W. Brandt and G. Lapicki, L-shell Coulomb ionization by heavy charged particles, Phys. Rev. A 20, 465-479 \(1979\).](#)
2. [G. Lapicki and W. Losonsky, Coulomb deflection in ion-atom collisions, Phys.Rev.A 20 , 481-490 \(1979\).](#)
3. [G. Lapicki and F. D. McDaniel, Electron capture from K shells by fully stripped ions, Phys.Rev.A 22, 1896-1905 \(1980\).](#)
4. [W. Brandt and G.Lapicki, Energy-loss effect in in inner shell Coulomb ionization by heavy charged particles, Phys.Rev.A 23, 1717-1729 \(1981\).](#)
5. [G. Lapicki and W. Lichten, Reconciliation of atomoc- and molecular orbital models in slow and symmetric collisions, Phys.Rev.A 31, 1354-1361 \(1985\).](#)
6. [G. Lapicki, Cross sections for K-shell x-ray production by hydrogen and helium ions, J.Phys.Chem. Data 18, 111-218 \(1989\).](#)
7. [G. Lapicki, Testing of the ECPSSR theory and its modifications with ratios of antiproton-to-proton ionization cross sections, Nucl.Instr.Meth. B 214, 34-42 \(2005\).](#)
8. [G. Lapicki, Scaling of analytical cross sections for K-shell ionization by nonrelativistic protons to cross sections by protons at relativistic velocities, J.Phys.B 41, 115201-115214 \(2008\).](#)
9. [J. Miranda and G. Lapicki, Experimental cross sections for L-shell x-ray production and ionization by protons, At.Data Nucl.Data Tables 100, 651-780 \(2014\).](#)
10. [G. Lapicki, The status of theoretical L-shell x-ray production by protons based on their revised empirical fit, Nucl.Instr.Meth. B 467, 123-129 \(2000\).](#)

Circa 200 publications. The most recent refereed articles since 2010:

1. D. Mitra, M. Sarkar, D. Bhattacharya, S. Santra, A. C. Mandal, G. Lapicki, "Lower and upper bounds on M-shell X-ray production cross sections by heavy ions", *Nuclear Instruments & Methods in Physics Research B*, 268 450-459 (2010).
2. G. Lapicki and J. Miranda, "Updated database for L x-ray production by protons and extraction of L-subshell ionization cross sections from only L γ and L α + L β cross sections", *X-Ray Spectrometry* 40, 122-126 (2011).
3. L.C. Phinney, G. Lapicki, D.L. Weathers, F.U. Naab, J.L. Duggan, and F.D. McDaniel "Thorium and uranium M-shell x-ray production cross sections by 4.5-11.3 MeV carbon ion and 4.5-13.5 MeV oxygen ion bombardment", *J. Phys. B* 45, 035205-035213 (2012).
4. J. Miranda and G. Lapicki, "Experimental cross sections for L-shell x-ray production and ionization by protons", *At.Data Nucl.Data Tables* 100, 651-780 (2014).
5. G. Lapicki, "Werner Brandt legacy to PIXE: Past and present", *Nuclear Instruments & Methods in Physics Research B*, 318. 6-10 (2014).
6. D. D. Cohen, E. Stelcer, J. Crawford, A. Atanacio, C. Doherty, and G. Lapicki, "Comparison of proton and helium induced M subshell x-ray production cross sections with the ECUSAR theory", *Nuclear Instruments & Methods in Physics Research B*, 318, 11-14 (2014).
7. Ž. Smit and G. Lapicki, "Energy loss in the ECPSSR theory and its calculation with exact integration limits", *J. Phys. B* 47, 055203-055210 (2014).
8. G. Lapicki, "Analytical formulas for differential cross sections for ejection of electrons in ionization of water by protons in the PWBA and ECPSSR", *J. Phys.Conf.Series* 635, 022015 (2015).
9. S. Kumar, U. Singh, M. Oswal, G. Singh, N. Singh, D. Mitra, T. Nandi, G. Lapicki, "L shell x-ray production in high-Z elements using 4-6 MeV/u fluorine ions", *Nuclear Instruments & Methods in Physics Research B*, 395 39-51 (2017).
10. J. Miranda and G. Lapicki, "Errata and update to Experimental cross sections for L-shell x-ray production and ionization by protons", *At.Data Nucl.Data Tables*, 119, 443-453 (2018).
11. G. Lapicki and J. Miranda, "Universal empirical fit to L-shell X-ray production cross sections by protons", *Nuclear Instruments & Methods in Physics Research B*, 414, 184-189 (2018).
12. C. Bagdia, S. Bhattacharjee, M. Roychowdhury, A. Mandal, G. Lapicki, L. Tribedi, "K-K electron capture from adenine and CO₂ molecule by fast carbon ions using KLL-Auger electron technique", *X-Ray Spectrometry*, 49, 160-164 (2020).
13. C. Bagdia, S. Bhattacharjee, M. Chowdhury, A. Mandal, G. Lapicki, L. Tribedi, "1s-1s electron transfer in collisions of fast C and O ions with adenine", *Nuclear Instruments & Methods in Physics Research B*. 462, 68-74 (2020).
14. G. Lapicki, "The status of theoretical L-shell x-ray production by protons based on their revised empirical fit", *Nuclear Instruments & Methods in Physics Research B*, 467, 123-129 (2000).

INVITED PRESENTATIONS (the most recent since 2010)

An invited first talk at the opening session of the 12th International Conference on Particle Induced X-Ray Emission and Its Analytical Applications, 27 June -2 July, 2010, Guildford, UK.

An invited at the 21st International Conference on the Application of Accelerators in Research and Industry, 8-13 August, 2010, Fort Worth, USA.

Poster at the 14th International Congress of Radiation Research (incorporating the 57th Annual Meeting of the Radiation Research Society), 28 August -1 September, 2011, Warsaw, Poland.

[An invited first talk at the opening session of the 13th International Conference on Particle Induced X-Ray Emission, 3-8 March 2013, Gramado, Brazil.](#)

An invited talk at the [24th International Symposium on Ion-Atom Collisions, 19-21 July 2015, Barcelona, Spain.](#)

An invited talk at the 24th Conference on Applications of Accelerators in Research and Industry, Oct 30-Nov 4, 2016, Fort Worth, USA.

An invited talk at the 13th International Topical Meeting on Nuclear Applications of Accelerators, July 31-Aug 4, 2017, Québec City, Canada.

An invited talk at the 25th Conference on Applications of Accelerators in Research and Industry, Aug 12-17, 2018, Grapevine, TX, USA.

Organizing committee for [Atomic and Nuclear Physics in 2018 \(Boston\) and 2017 \(Las Vegas\)](#)

Professional memberships: [American Physics Society](#), [Sigma Xi](#), [Fullbright Association](#)
[Canadian Nuclear Society](#) Sigma Pi Sigma

Topic Editor: Atomic and Molecular Physics at the 24th CAARI, 2016, Fort Worth, USA.

Editorial Boards:

[American Research Journal of Physics](#)

[Atomic and Molecular Physics editor for Open Physics](#)

[Atoms](#)

[Journal of Physics and Advanced Applications](#)

[Associate Editor for Journal of Atomic and Molecular Physics](#)

[Journal of Atomic and Molecular Sciences](#)

[Advisory Editorial Board for Nuclear Instruments and Methods B \(since 2019\)](#)

[Number of citations > 3600 on Google Scholar](#)