

# Curriculum Vitae

## Prof. George A. Souliotis

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### Personal Information

Date of Birth: October 17, 1963  
Place of Birth: Athens, Greece  
Nationality: Greek, US Citizen  
Marital status: Married

### Educational Background

- Ph. D. Chemical Physics (Experimental Nuclear Chemistry)  
Michigan State University, Michigan, USA, March 1992.

*Thesis Title:* ‘Study of Projectile Fragmentation Reactions at Intermediate Energies’  
(accessible at: <http://groups.nslc.msu.edu/nslc-library/Thesis>).

- B.S. Chemistry, University of Athens, Greece, May 1986.

### Research Experience and Interests

- Studies of nuclear reactions and dynamics. Studies at the limits of nuclear stability: neutron drip-line, proton drip-line.
- Rare isotope beam (RIB) production and applications.
- Research, development and experiments in new RIB facilities, e.g., the US Facility for Rare Isotope Beams “FRIB” and the European facility ‘EURISOL’.
- Mechanisms of production of heavy and superheavy elements.
- Theoretical description of nuclear reactions (especially involving rare isotopes) via microscopic many-body models, such as QMD, AMD and FMD (Quantum, Antisymmetrized and Fermionic Molecular Dynamics, respectively).
- Nuclear astrophysics: nucleosynthesis of light and heavy elements.
- Strong interest and involvement in subjects at the interface with astrophysics/astronomy and cosmology (e.g., supernova nucleosynthesis and birth/evolution of neutron stars, as well as neutrino astrophysics)
- Strong interest in applications of nuclear science: a) energy production in fission and incineration of nuclear waste b) proton and heavy-ion cancer therapy.

## Employment

**9/1986 - 3/1992:** Graduate Assistant at the Chemistry Department of Michigan State University.

a. Teaching Assistant: 1986-1989. b. Research Assistant: 1989-1992 at the National Superconducting Cyclotron Laboratory-NSCL. Study of projectile fragmentation reactions at intermediate energies and production of radioactive nuclear beams of light ions.

**5/1992 - 5/1993:** Military Service (mandatory) in the Greek Army.

**6/1993 - 6/1994:** Visiting Researcher at the Institute of Nuclear Physics (Tandem Accelerator Laboratory) of NCSR 'Demokritos', Athens, Greece. Production and separation of low energy radioactive beams for application in Nuclear Astrophysics.

**7/1994 -1/1997:** Postdoctoral Research Associate at the Chemistry Department of Oregon State University. Study of fragmentation reactions with very heavy ions at intermediate energies. Production of neutron-rich nuclides by intermediate-energy fission of  $^{238}\text{U}$ . Study of fusion reactions using neutron-rich radioactive beams.

**2/1997-12/1999:** Research Associate at the Institute of Nuclear Physics (Tandem Accelerator Laboratory) of NCSR 'Demokritos', Athens, Greece. Experimental Nuclear Astrophysics. Study of  $(p, \gamma)$  and  $(\alpha, \gamma)$  reactions, p-process. Production of proton-rich nuclides by intermediate-energy fragmentation of very heavy beams. Analytical applications of nuclear science.

**1/2000-3/2000:** Visiting Research Associate at Oregon State University. Study of production mechanisms of heavy and superheavy elements.

**4/2000 - 8/2001:** Research Associate, Cyclotron Institute, Texas A&M University.

**9/2001-8/2006:** Assistant Research Scientist, Cyclotron Institute, Texas A&M University.

**9/2006-9/2009:** Associate Research Scientist, Cyclotron Institute, Texas A&M University.

Investigation of rare isotope beam production around the Fermi energy via deep inelastic collisions and fission. Experimental studies of nuclear multifragmentation and the nuclear equation of state (EOS). Studies of the N/Z degree of freedom and of the nuclear equation of state via high-resolution (mass spectrometric) measurements of heavy residues. Project Leader (for design, operation and major contributions to the research program) of a Superconducting Solenoid Rare Isotope Separator. Active participation and substantial contributions to the upgrade plans of the Texas A&M Cyclotron Facility. Research and development related to the FRIB Facility (novel reaction mechanisms and approaches for RIB production, large acceptance separator concepts).

**10/2009 – present:** Assistant Professor, Laboratory of Physical Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece.

**Teaching responsibilities:** Advanced undergraduate course and laboratory in Nuclear Chemistry (Chem 818). Physical Chemistry Laboratory (lectures and lab). Physical Chemistry (offered to the Department of Pharmacy). Graduate course on Selected Topics on Modern Nuclear Chemistry/Physics. Supervisor of 2 MSc thesis (1 finished, 1 ongoing).

**Research program:** Production of exotic neutron-rich nuclei. Study of nuclear dynamics and thermodynamics, study of the nuclear equation of state and applications related to astrophysics/astronomy. Studies of low-energy nuclear fission. Applications of proton and heavy-ion beams in cancer therapy: modeling of nuclear interactions of fast beams with tissue material.

### **Referee/Reviewer**

Journal of Physics G  
Nuclear Physics A  
European Physical Journal A  
Nuclear Instruments and Methods

### **Professional Affiliations**

American Physical Society (APS)  
American Association for the Advancement of Science (AAAS)  
Hellenic Nuclear Physics Society (HNPS)  
Hellenic Institute of Nuclear Physics (HINP)

### **Publications: Numerical References**

Publications in refereed scientific journals: **89**  
Full papers in proceedings of conferences: **30**  
Talks and seminars (total): **85**. Invited talks: **48**

**Citations** (from the Science Citation Index as of 1/2014): **~1300**  
**h-factor: 22**

## Publications in Refereed Scientific Journals

1. A Beamline Zero-degree Spectrometer for Measurements of Projectile Fragment Distributions. G.A. Souliotis, D.J. Morrissey, and B.M. Sherrill, *Rev. Sci. Instrum.* 62, 342 (1991).
2. Zero-degree Measurements of Momentum Distributions of Projectile-like Fragments. G.A. Souliotis, D.J. Morrissey, N.A. Orr, B.M. Sherrill, and J.A. Winger, *Phys. Rev. C* 46, 1383 (1992).
3. Studies of Exotic Nuclear Beams with the NSCL A1200. D.J. Morrissey, B.M. Sherrill and the A1200 Group. (A1200 Group in 1992: M.F. Mohar, N.A. Orr, G.A. Souliotis and J.A. Winger.) *Nucl. Phys. A* 538, 333c (1992).
4. Momentum Distributions  ${}^9\text{Li}$  Fragments following the Break-up of  ${}^{11}\text{Li}$ . N.A. Orr, N. Anantaraman, S.M. Austin, C.A. Bertulani, K. Hanold, J. Kelley, D.J. Morrissey, B.M. Sherrill, G.A. Souliotis, M. Thoennesen, J.S. Winfield, J.A. Winger, *Phys. Rev. Lett.* 69, 2050 (1992).
5. Differential Cross Sections of Projectile-like Fragments from  ${}^{18}\text{O}$  and  ${}^{40}\text{Ar}$  at  $E/A=80$  MeV. G.A. Souliotis, R. Harkewicz, K. McDonald, D.J. Morrissey, Y. Chen, E. Kashy, B.M. Sherrill, N.A. Orr and J.A. Winger, *Phys. Rev. C* 49, 3301 (1994).
6. Momentum Distributions of  ${}^9\text{Li}$  Fragments from the Break-up of  ${}^{11}\text{Li}$  and the Neutron Halo. N.A. Orr, N. Anantaraman, S.M. Austin, C.A. Bertulani, K. Hanold, J. Kelley, R.A. Kryger, D.J. Morrissey, B.M. Sherrill, G.A. Souliotis, M. Steiner, M. Thoennesen, J.S. Winfield, J.A. Winger and B.M. Young, *Phys. Rev. C* 51, 3116 (1995).
7. Fusion Enhancement with Neutron-Rich Radioactive Beams. K.E. Zyromski, W. Loveland, G.A. Souliotis, D.J. Morrissey, C.F. Powell, O. Batenkov, K. Aleklett, R. Yanez, I. Forsberg, M. Sanchez-Vega, J.R. Dunn and B.G. Glagola, *Phys. Rev. C* 55, R562 (1997).
8. Production of Neutron Rich Nuclides and Radioactive Beams by Intermediate Energy  ${}^{238}\text{U}$  Fission. G.A. Souliotis, W. Loveland, G.J. Wozniak, K.E. Zyromski, D.J. Morrissey, J.O. Liljenzin and K. Aleklett, *Phys. Rev. C* 55, R2146 (1997).
9. Single Neutron Emission Following  ${}^{11}\text{Li}$   $\beta$ -Decay. D.J. Morrissey, K. McDonald, D. Bazin, B.A. Brown, R. Harkewicz, N.A. Orr, B.M. Sherrill, G.A. Souliotis, M. Steiner, J.A. Winger, S.J. Yennello, B.M. Young, S. Lukyanov, G. Chubarian and Y. Oganessian, *Nucl. Phys. A* 627, 222 (1997).
10. Fusion Enhancement with Neutron-Rich Radioactive Beams. W. Loveland, K.E. Zyromski, G.A. Souliotis, D.J. Morrissey, C.F. Powell, O. Batenkov, K.

- Aleklett, R. Yanez, I. Forsberg, M. Sanchez-Vega, J.R. Dunn and B.G. Glagola, *J. Phys. G* 23, 1251 (1997).
11. Heavy Residue Formation in 20 MeV/nucleon  $^{197}\text{Au} - ^{12}\text{C}$  and  $^{197}\text{Au} - ^{27}\text{Al}$  Collisions. G.A. Souliotis, K. Hanold, I. Lhenry, W. Loveland, D.J. Morrissey and G.J. Wozniak, *Phys. Rev. C* 57, 3129 (1998).
  12. Simulations and comparisons of proton channeling spectra along the (111) axis of  $^{28}\text{Si}$  in the backscattering geometry. X.A. Aslanoglou, A. Karydas, M. Kokkoris, E. Kossionides, Th. Paradellis, G.A. Souliotis and R. Vlastou, *Nucl. Instrum. Methods* 161 - 163, 524 (2000).
  13. Formation and Studies of New Proton-Emitters via Projectile Fragmentation of Heavy-Element Beams. G.A. Souliotis, *Physica Scripta* T88, 153 (2000).
  14. Fusion enhancement in the  $^{32,38}\text{S} + ^{181}\text{Ta}$  reaction, K.E. Zyromski, W. Loveland, G.A. Souliotis, D.J. Morrissey, C.F. Powell, O. Batenkov, K. Aleklett, R. Yanez and I. Forsberg, *Phys. Rev. C* 63, 024615 (2001).
  15. Cross section measurements of the  $^{93}\text{Nb}(p,\gamma)^{94}\text{Mo}$  reaction at  $E_p = 1.3 - 4.9$  MeV relevant to the nucleosynthetic p process. S. Harissopulos, E. Skreti, P. Tzagari, G.A. Souliotis, P. Demetriou, T. Paradellis, J.W. Hammer, R. Kunz, C. Angulo, S. Goriely and T. Rauscher, *Phys. Rev. C* 64, 055804 (2001).
  16. Heavy Residue Formation in 20 MeV/nucleon  $^{197}\text{Au} + ^{90}\text{Zr}$  Collisions. G.A. Souliotis, W. Loveland, K. Hanold, G. Wozniak and D.J. Morrissey, *Nucl. Phys. A* 705, 279 (2002).
  17. Enhanced Production of Neutron-Rich Isotopes in the Reaction of 25 MeV/nucleon  $^{86}\text{Kr}$  on  $^{64}\text{Ni}$ . G.A. Souliotis, M. Veselsky, G. Chubarian, L. Trache, A. Keksis, E. Martin, A. Ruangma, E. Winchester, and S.J. Yennello, *Phys. Lett. B* 543, 163 (2002).
  18. Production and Separation of Neutron-rich Rare Isotopes around and below the Fermi Energy. G.A. Souliotis, M. Veselsky, G. Chubarian and S.J. Yennello, *Nucl. Instrum. Methods B* 204, 166 (2003).
  19. Energy Dependence of the Isotopic Composition in Nuclear Multifragmentation. D.V. Shetty, S.J. Yennello, E. Martin, A. Keksis, and G.A. Souliotis, *Phys. Rev. C* 68, 021602(R) (2003).
  20. Heavy Residues with  $A < 90$  from the Asymmetric Reaction of 20 MeV/nucleon  $^{124}\text{Sn} + ^{27}\text{Al}$  as a Sensitive Probe of the Onset of Multifragmentation. M. Veselsky, G.A. Souliotis, G. Chubarian, L. Trache, A. Keksis, E. Martin, A. Ruangma, E. Winchester, and S.J. Yennello, *Nucl. Phys. A* 724, 431 (2003).

- 21.** Enhanced Production of Neutron-Rich Rare Isotopes in Peripheral Collisions at Fermi Energies. G.A. Souliotis, M. Veselsky, G. Chubarian, L. Trache, A. Keksis, E. Martin, D. V. Shetty and S. J. Yennello, *Phys. Rev. Lett.* 91, 022701 (2003).
- 22.** Isotopic Scaling of Heavy Projectile Residues from the Collisions of 25 MeV/nucleon  $^{86}\text{Kr}$  with  $^{124,112}\text{Sn}$  and  $^{64,58}\text{Ni}$ . G.A. Souliotis, D.V. Shetty, M. Veselsky, G. Chubarian, L. Trache, A. Keksis, E. Martin, and S.J. Yennello, *Phys. Rev. C* 68, 024605 (2003).
- 23.** Intermediate Mass Fragments and Isospin Dependence in  $^{124}\text{Sn}$ ,  $^{136}\text{Xe} + ^{124}\text{Sn}$ ,  $^{112}\text{Sn}$  Reactions at 28 MeV/nucleon. D.V. Shetty, A. Keksis, E. Martin, A. Ruangma, G.A. Souliotis, M. Veselsky, E. Winchester, S.J. Yennello, K. Hagel, Y.G. Ma, A. Makeev, N. Marie, M. Murray, J.B. Natowitz, L. Qin, P. Smith, R. Wada, J. Wang, M. Cinausero, E. Fioretto, G. Prete, D. Fabris, M. Lunardon, G. Nebbia, V. Rizzi, G. Viesti, J. Cibor, Z. Majka, P. Staszal, R. Alfaro, A. Martinez-Davalos, A. Menchaca-Rocha, Y. El Masri and T. Keutgen (The NIMROD Collaboration), *Phys. Rev. C* 68, 054605 (2003).
- 24.** Mid-rapidity emission in  $^{124}\text{Sn}$ ,  $^{124}\text{Xe} + ^{124}\text{Sn}$ ,  $^{112}\text{Sn}$  reactions at 28 MeV/nucleon. D.V. Shetty, A. Keksis, E. Martin, A. Ruangma, G.A. Souliotis, M. Veselsky, E.M. Winchester, S.J. Yennello, K. Hagel, Y.G. Ma, A. Makeev, N. Marie, M. Murray, J.B. Natowitz, L. Qin, P. Smith, R. Wada, J. Wang, M. Cinausero, E. Fioretto, G. Prete, D. Fabris, M. Lunardon, G. Nebbia, V. Rizzi, G. Viesti, J. Cibor, Z. Majka, P. Staszal, R. Alfaro, A. Martinez-Davalos, A. Menchaca-Rocha, Y. El Masri and T. Keutgen, *Nucl. Phys. A* 734, E100 (2004).
- 25.** Neutron-Rich Rare Isotope Production in the Fermi Energy Domain, G.A. Souliotis, M. Veselsky, G. Chubarian, L. Trache and S.J. Yennello, *Nucl. Phys. A* 734, 557 (2004).
- 26.** Isoscaling in Peripheral Nuclear Collisions around the Fermi Energy and a Signal of Chemical Separation from its Excitation Energy Dependence. M. Veselsky, G.A. Souliotis and S.J. Yennello, *Phys. Rev. C* 69, 031602(R) (2004).
- 27.** Isoscaling Studies of Fission: A Sensitive Probe into the Dynamics of Scission. M. Veselsky, G.A. Souliotis and M.J. Jandel, *Phys. Rev. C* 69, 044607 (2004).
- 28.** Evidence of Critical Behavior in the Disassembly of Nuclei with  $A \sim 36$ . Y.G. Ma, R. Wada, K. Hagel, J. Wang, T. Keutgen, Z. Majka, M. Murray, L. Qin, P. Smith, J.B. Natowitz, R. Alfaro, J. Cibor, M. Cinausero, Y. El Masri, D. Fabris, E. Fioretto, A. Keksis, M. Lunardon, A. Makeev, N. Marie, E. Martin, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G.

Viesti, E.M. Winchester, S.J. Yennello (The NIMROD Collaboration) and A. Ono, *Phys. Rev. C* 69, 031604(R) (2004).

29. Reaction Dynamics and Multifragmentation in Fermi-Energy Heavy-Ion Reactions. R. Wada, T. Keutgen, K. Hagel, Y.G. Ma, J. Wang, M. Murray, L. Qin, P. Smith, J.B. Natowitz, R. Alfarro, J. Cibor, M. Cinausero, Y. El Masri, D. Fabris, E. Fioretto, A. Keksis, M. Lunardon, A. Makeev, N. Marie, E. Martin, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G. Viesti, E.M. Winchester, S.J. Yennello, W. Zipper (The NIMROD Collaboration) and A. Ono, *Phys. Rev. C* 69, 044610 (2004).
30. Heavy Residue Isoscaling as a Probe of the Process of N/Z Equilibration. G.A. Souliotis, M. Veselsky, D.V. Shetty and S.J. Yennello, *Phys. Lett. B* 588, 35 (2004).
31. Neutron-Rich Rare Isotope Production and Studies of the N/Z Degree of Freedom in Deep-Inelastic Collisions at Fermi Energies. G.A. Souliotis, M. Veselsky, D.V. Shetty, L. Trache and S.J. Yennello, *Nucl. Phys. A* 746, 526 (2004).
32. Symmetry Energy and the Isospin-Dependent Equation of State. D.V. Shetty, S.J. Yennello, A.S. Botvina, G.A. Souliotis, E. Bell, M. Jandel and A. Keksis, *Phys. Rev. C* 70, 011601(R) (2004).
33. Fragment Yield Distribution and the Influence of Neutron Composition and Excitation Energy in Multifragmentation Reactions. D.V. Shetty, A.S. Botvina, S.J. Yennello, G.A. Souliotis, E. Bell and A. Keksis, *Phys. Rev. C* 71, 024602 (2005).
34. The Decay Time Scale of Highly Excited Nuclei as Seen from Asymmetric Emission of Particles. M. Jandel, A.S. Botvina, S.J. Yennello, G.A. Souliotis, D.V. Shetty, E. Bell and A. Keksis, *J. Phys. G* 31, 29 (2005).
35. Towards the Critical Behavior in Light Nuclei by the Nimrod Detector. Y.G. Ma, J.B. Natowitz, R. Wada, K. Hagel, J. Wang, T. Keutgen, Z. Majka, M. Murray, L. Qin, P. Smith, R. Alfarro, J. Cibor, M. Cinausero, Y. El Masri, D. Fabris, E. Fioretto, A. Keksis, M. Lunardon, A. Makeev, N. Marie, E. Martin, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G. Viesti, E.M. Winchester, S.J. Yennello (The NIMROD Collaboration) *Nucl. Phys. A* 749, 106 (2005).
36. Critical Behavior in Light Nuclear Systems: Experimental Aspects. Y.G. Ma, J.B. Natowitz, R. Wada, K. Hagel, J. Wang, T. Keutgen, Z. Majka, M. Murray, L. Qin, P. Smith, R. Alfarro, J. Cibor, M. Cinausero, Y. El Masri, D. Fabris, E. Fioretto, A. Keksis, M. Lunardon, A. Makeev, N. Marie, E.

- Martin, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G. Viesti, E.M. Winchester, S.J. Yennello (The NIMROD Collaboration), *Phys. Rev. C* 71, 054606 (2005).
- 37.** Resolving Multiple Particles in a Highly Segmented Silicon Array. T. Padaszynski, P. Sprunger, R.T. de Souza, S. Hudan, A. Alexander, B. Davin, G. Fleener, A. Mcintosh, C. Metelko, R. Moore, N. Peters, J. Poehlman, J. Gauthier, F. Grenier, R. Roy, D. Theriault, E. Bell, J. Garey, J. Iglie, A.L. Keksis, S. Parketon, C. Richers, D.V. Shetty, S.N. Soisson, G.A. Souliotis, B. Stein, and S.J. Yennello, *Nucl. Instrum. Methods A* 547, 464 (2005).
- 38.** A Ghoshal-like test of Equilibration in Near Fermi Energy Heavy-Ion Collisions. J. Wang, T. Keutgen, R. Wada, K. Hagel, Y.G. Ma, M. Murray, L. Qin, P. Smith, J.B. Natowitz, R. Alfarro, J. Cibor, A. Botvina, M. Cinausero, Y. El Masri, D. Fabris, A. Keksis, S. Kowalski, M. Lunardon, A. Makeev, N. Marie, E. Martin, Z. Majka, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, S. Moretto, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G. Viesti, E.M. Winchester, S.J. Yennello, W. Zipper (The NIMROD Collaboration) and A. Ono, *Phys. Rev. C* 71, 054608 (2005).
- 39.** Tracing the Evolution of Temperature in Near Fermi Energy Heavy-Ion Collisions. J. Wang, R. Wada, T. Keutgen, K. Hagel, Y.G. Ma, M. Murray, L. Qin, A. Botvina, S. Kowalski, T. Materna, J.B. Natowitz, R. Alfarro, J. Cibor, M. Cinausero, Y. El Masri, D. Fabris, E. Fioretto, A. Keksis, M. Lunardon, A. Makeev, N. Marie, E. Martin, Z. Majka, A. Martinez-Davalos, A. Menchaca-Rocha, G. Nebbia, G. Prete, V. Rizzi, A. Ruangma, D.V. Shetty, G.A. Souliotis, P. Staszal, M. Veselsky, G. Viesti, E.M. Winchester, S.J. Yennello, W. Zipper (The NIMROD Collaboration) and A. Ono, *Phys. Rev. C* 72, 024603 (2005).
- 40.** Effect of Nuclear Periphery on Nucleon Transfer in Peripheral Collisions. M. Veselsky and G.A. Souliotis, *Nucl. Phys. A* 765, 252 (2006).
- 41.** Heavy Residue Isoscaling as a Probe of the Nuclear Symmetry Energy of Hot Fragments. G.A. Souliotis, D.V. Shetty, A. Keksis, E. Bell, M. Jandel, M. Veselsky and S.J. Yennello, *Phys. Rev. C* 73, 024606 (2006).
- 42.** Symmetry Energy and the Isoscaling Properties of the Fragments Produced in  $^{40}\text{Ar}$ ,  $^{40}\text{Ca} + ^{58}\text{Fe}$ ,  $^{58}\text{Ni}$  Reactions at 25 - 53 MeV/nucleon. J. Iglie, D.V. Shetty, S.J. Yennello, G.A. Souliotis, M. Jandel and A. Keksis, S. Soisson, B. Stein, S. Wuenschel and A.S. Botvina, *Phys. Rev. C* 74, 024605 (2006).
- 43.** Fusion enhancement in the  $^{38}\text{S} + ^{208}\text{Pb}$  reaction. W. Loveland, D. Peterson, A.M. Vinodkumar, P.H. Sprunger, D. Shapira, J.F. Liang, G.A. Souliotis, D.J. Morrissey and P. Lofy, *Phys. Rev. C* 74, 044607 (2006).



44. Signatures of Critical Behavior in the Multifragmentation of Nuclei with Charge  $Z=12-15$  and its  $N/Z$  Dependence. M. Jandel, S. Wuenschel, D.V. Shetty, G.A. Souliotis, M. Veselsky, A. Keksis and S.J. Yennello, *Phys. Rev. C* 74, 054608 (2006).
45. Neutron to proton ratios of quasiprojectile and midrapidity emission in the  $^{64}\text{Zn} + ^{64}\text{Zn}$  reaction at 45 MeV/nucleon. D. Theriault, J. Gauthier, F. Grenier, F. Moisan, C. St-Pierre, R. Roy, B. Davin, S. Hudan, T. Paduszynski, R.T. de Souza, E. Bell, J. Garey, J. Iglio, A.L. Keksis, S. Parketon, C. Richers, D.V. Shetty, S.N. Soisson, G.A. Souliotis, B.C. Stein, S.J. Yennello, *Phys. Rev. C* 74, 051602(R) 2006.
46. Production of Cold Fragments in Nucleus-Nucleus Collisions at Fermi-Energies, M. Veselsky and G.A. Souliotis, *Nucl. Phys. A* 781, 521 (2007).
47. Constraining the density dependence of the symmetry energy in the nuclear equation of state using heavy ion beams. D.V. Shetty, S.J. Yennello, G.A. Souliotis, *Nucl. Instrum. Methods B* 261, 990 (2007).
48. Properties of hot nuclear fragments formed in multifragmentation and their astrophysical implications, G.A. Souliotis, A.S. Botvina, D.V. Shetty, A.L. Keksis, M. Jandel, M. Veselsky and S.J. Yennello, *Nucl. Instrum. Methods B* 261, 996 (2007).
49. Rare Isotope Production in the Fermi Energy Regime and Application to the Texas A&M RIB Upgrade. G.A. Souliotis, A. L. Keksis, B.C. Stein, M. Veselsky, M. Jandel, D.V. Shetty, S.N. Soisson, S. Wuenschel, and S.J. Yennello, *Nucl. Instrum. Methods B* 261, 1094 (2007).
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51. Tracing the Evolution of the Symmetry Energy of Hot Nuclear Fragments from the Compound Nucleus towards Multifragmentation. G.A. Souliotis, A.S. Botvina, D.V. Shetty, A. Keksis, M. Jandel, M. Veselsky and S.J. Yennello, *Phys. Rev. C* 75, 011601 (2007).

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- 84.** Experimental determination of the quasi-projectile mass with measured neutrons, P. Marini, A. Zarrella, A. Bonasera, G. Bonasera, P. Cammarata, L. Heilborn, Z. Kohley, J. Mabilia, L.W. May, A.B. McIntosh, A. Raphelt, G.A. Souliotis, S.J. Yennello, *Nucl. Instrum. Methods A* 707, 80 (2013).
- 85.** Using light charged particles to probe the asymmetry dependence of the nuclear caloric curve A.B. McIntosh, A. Bonasera, Z. Kohley, P. J. Cammarata, K. Hagel, L. Heilborn, J. Mabilia, L. W. May, P. Marini, A. Raphelt, G. A. Souliotis, S. Wuenschel, A. Zarrella, S. J. Yennello, *Phys. Rev. C* 87, 034617 (2013).
- 86.** Timescale for equilibration of  $N/Z$  gradients in dinuclear systems. K. Brown, S. Hudan, R.T. deSouza, J. Gauthier, R. Roy, D.V. Shetty, G.A. Souliotis, and S. J. Yennello, *Phys. Rev. C* 87, 061601 (2013).
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89. How much cooler would it be with some more neutrons ? A.B. McIntosh, J. Mabiála, A. Bonasera, P. Cammarata, K. Hagel, Z. Kohley, L. Heilborn, L.W. May, P. Marini, A. Raphelt, G.A. Souliotis, S. Wuenschel, A. Zarrella, H. Zheng and S.J. Yennello, *Eur. Phys. J. A* 50:35 (2014).

## Invited talks

1. Momentum Distributions and Cross Sections of Fragmentation Product from Intermediate Energy  $^{18}\text{O}$  and  $^{40}\text{Ar}$  Beams. G.A. Souliotis, Invited Seminar, Radiation Center, Oregon State University, Corvallis, Oregon, July 1994.
2. Production of Neutron-Rich Nuclides and Radioactive Beams by Intermediate-Energy Projectile Fission of  $^{238}\text{U}$ . G.A. Souliotis, Invited Seminar, Institute of Nuclear Physics, NCSR 'Demokritos', Athens, Greece, May 1997.
3. Generation of Neutron Rich-Nuclides and Radioactive Beams for Studies of the Astrophysical r-Process. G.A. Souliotis, Invited Seminar, Institute for Radiation Physics, University of Stuttgart, Germany, July 1997.
4. Survival of Heavy Residues and Formation of New Heavy Nuclei with Unusual N/Z Ratios at Intermediate Energy Collisions. G.A. Souliotis, W. Loveland, D.J. Morrissey and G.J. Wozniak, Invited Talk, 216th National Meeting of the American Chemical Society, Boston, MA, August 23 - 27, 1998.
5. Intermediate-Energy Fragmentation of Heavy-Element Beams: A Novel Approach towards the Nuclear Drip-Lines. G.A. Souliotis, Invited talk, 10th Symposium of the Hellenic Nuclear Physics Society, NCSR Demokritos, Athens, Greece, May 27 - 28, 1999.
6. Fission of  $^{238}\text{U}$  at Intermediate Energy: Rates of Very Neutron Rich Nuclei of Interest to r-Process Studies. G.A. Souliotis, Invited Seminar, Institut de Physique Nucleaire, Université Catholique de Louvain, Louvain-la-Neuve, Belgium, October 1999.
7. Intermediate-Energy Fragmentation of Heavy Beams: A New Path to Create and Study Heavy Nuclei Very far from Stability. G.A. Souliotis, Invited Lecture presented at the XIII International School on Nuclear Physics, Neutron Physics and Nuclear Energy, Sept. 27 - Oct. 3, 1999, Varna, Bulgaria.
8. Fission of  $^{238}\text{U}$  Projectiles at Intermediate Energy: Cross Sections and Production Rates of Very Neutron-Rich Nuclides. G.A. Souliotis, Invited Seminar, Cyclotron Institute, Texas A&M University, January 2000.

9. Rare Isotope Production around the Fermi Energy at Texas A&M. G.A. Souliotis, Invited Talk presented at the 2nd EURISOL Town Meeting, Abano Terme (Padova) Italy, Jan. 24-25 2002.
10. Neutron-Rich Rare Isotope Production. G.A. Souliotis, Colloquium, Cyclotron Institute, Texas A&M University, May 28, 2002.
11. Isospin and Rare Isotope Production. G.A. Souliotis, Invited Talk presented at the Nuclear Chemistry Gordon Conference, Colby-Sawyer College, New London, NH, June 16-21, 2002.
12. Separator Systems for Deep Inelastic Scattering with RIBs at RIA. G.A. Souliotis, Invited Talk presented at the Workshop on the Experimental Equipment for RIA, Oak Ridge, TN, March 18-22, 2003.
13. Heavy Residue Isotopic Scaling and N/Z Equilibration. G.A. Souliotis, Colloquium, Cyclotron Institute, Texas A&M University, May 6, 2003.
14. Rare Isotope Production and Nuclear Dynamics Studies at Fermi Energies. G.A. Souliotis, Invited Seminar presented at the Institute of Nuclear Physics of NCSR 'Demokritos', Athens, Greece, June 24, 2003.
15. Novel Routes to Produce Extremely Neutron-Rich Rare Isotopes. G.A. Souliotis, Invited Seminar, Physics Division, Argonne National Laboratory, Argonne, IL, February 13, 2004.
16. Heavy Residues as Probes of Isospin Dynamics and Equilibration in Deep Inelastic Collisions around the Fermi Energy. G.A. Souliotis, Invited Talk presented at the Nuclear Chemistry Gordon Conference, Colby-Sawyer College, New London, NH, June 13 - 18, 2004.
17. Production of very Neutron-Rich Rare Isotopes in Deep-Inelastic Collisions with Stable and Radioactive Beams. G.A. Souliotis, Invited Seminar presented at the Physics Division of Oak Ridge National Lab., Oak Ridge TN, August 3, 2004.
18. Probing the Nuclear Symmetry Energy via Heavy-Residue Isoscaling. G.A. Souliotis, D.V. Shetty, A. Keksis, E. Bell, M. Jandel, M. Veselsky and S.J. Yennello, Invited Talk presented at the 229th National Meeting of the American Physical Society, San Diego CA, March 13-17 2005.
19. Projectile Residue Studies around and below the Fermi Energy. G.A. Souliotis, Invited Seminar, presented at GSI, Darmstadt, Germany, September 7, 2005.
20. Rare Isotope Beam (RIB) Capabilities Expected from the Upgrade Project of the Texas A&M Cyclotron Institute. G.A. Souliotis, Invited Talk presented at the HRIBF Fusion-Fission Workshop, Oak Ridge National Laboratory, Oak Ridge TN, December 2-3, 2005.

21. Properties of Hot Neutron-Drip-Line Nuclei formed in the Multifragmentation of Neutron-Rich Systems. Importance to Supernova Nucleosynthesis. G.A. Souliotis, Invited Seminar presented at the Department of Physics of Notre Dame University, Notre Dame IN, April 3, 2006.
22. Properties of Hot Neutron-Rich Nuclei Formed in Multifragmentation and their Importance to Supernova Nucleosynthesis. G.A. Souliotis, Invited Seminar presented at the Department of Physics of Western Michigan University, Kalamazoo, MI, April 10, 2006.
23. Neutron-rich rare isotope production below the Fermi energy and its application to the Texas A&M Radioactive Beam upgrade. G.A. Souliotis, Invited Seminar presented at the Institute of Physics of the Slovak Academy of Science, Bratislava, July 6, 2006.
24. Rare Isotope Production in the Fermi Energy Regime and Application to the Texas A&M RIB Upgrade. G.A. Souliotis, A. L. Keksis, B.C. Stein, M. Veselsky, M. Jandel, D.V. Shetty, S.N. Soisson, S. Wuenschel, and S.J. Yennello, Invited Talk, 19th International Conference on the Application of Accelerators in Research and Industry (CAARI-2006), Fort Worth, TX, August 20-25, 2006.
25. Rare Isotope Production around and below the Fermi Energy and its Application to the Texas A&M Radioactive Beam Upgrade. G.A. Souliotis, A. L. Keksis, B.C. Stein, M. Veselsky, D.V. Shetty and S.J. Yennello, Invited Talk presented at the 232nd National Meeting of the American Chemical Society, San Francisco, CA, September 10-14, 2006.
26. Properties of Hot Neutron-Rich Nuclei Formed in Multifragmentation and their Importance to Supernova Nucleosynthesis. G.A. Souliotis, Invited Seminar presented at the Institute of Nuclear Physics of NCSR 'Demokritos', Athens, Greece, November 29, 2006.
27. Neutron-Rich Rare Isotope Production at Fermi Energies and Application to the Texas A&M Radioactive Beam Upgrade Project. G.A. Souliotis, Invited Seminar presented at LNS, INFN, Catania, December 1, 2006.
28. A Large Acceptance Spectrometer for Re-accelerated Radioactive Beams of  $E/A=6-25$  MeV at the US Advanced Exotic Beam Facility. G.A. Souliotis, Invited Talk presented at the DNP/NSAC Town Meeting, Chicago, January 19-22, 2007.
29. Large Acceptance Spectrograph Design and Deep-Inelastic Scattering. G.A. Souliotis, Invited Talk presented at the "S3 (Super-Separator-Spectrometer) Collaboration" Meeting at GANIL, Caen, France, July 2-3, 2007.
30. Heavy Residue Studies below the Fermi Energy and the Role of the Nuclear Symmetry Energy. G.A. Souliotis, D.V. Shetty and S.J. Yennello, Invited Talk



- presented at the 234<sup>th</sup> National Meeting of the American Chemical Society, Boston, MA, August 19 - 23, 2007.
- 31.** Heavy Residue Studies Near the Fermi Energy and the Role of the Nuclear Symmetry Energy. G.A. Souliotis, D.V. Shetty and S.J. Yennello, Invited Talk presented at the International Conference on Nuclear Fragmentation (NUFRA-2007), Antalya, Turkey, September 24-30, 2007.
  - 32.** Probing the Nuclear Equation of State with Peripheral Collisions at Fermi Energies. G.A. Souliotis, Invited Talk, 17<sup>th</sup> Symposium of the Hellenic Nuclear Physics Society, University of Ioannina, Ioannina, May 30-31, 2008.
  - 33.** Probing the Extremes of the Nuclear Landscape with Peripheral Collisions at Fermi Energies, G.A. Souliotis, Invited Seminar, Institute of Physics, Bratislava, June 10, 2008.
  - 34.** Probing the Extremes of the Nuclear Landscape and the Nuclear Equation of State with Peripheral Heavy-Ion Collisions at Fermi Energies. G.A. Souliotis, Invited Lecture, 6<sup>th</sup> Balkan School on Nuclear Physics, Troyan, Bulgaria, 17-24 September 2008.
  - 35.** Studies of the Nuclear Landscape and the Nuclear Equation of State using Peripheral Collisions near the Fermi Energy. G.A. Souliotis, Invited Talk, 18<sup>th</sup> Symposium of the Hellenic Nuclear Physics Society, INP/NCSR “Demokritos”, 29-30 May 2009.
  - 36.** Studies of the Nuclear Landscape and the Nuclear Equation of State using Peripheral Collisions near the Fermi Energy. G.A. Souliotis, Invited Lecture, XVIII International School of Nucl. Physics, Varna, Bulgaria, Sept. 21-27 2009.
  - 37.** Studies of Heavy Residues from Peripheral Collisions near the Fermi Energy and the Nuclear Equation of State. G.A. Souliotis, Invited Talk, 2<sup>nd</sup> International Conference on Nuclear Fragmentation: from Basic Research to Applications, NUFRA-2009, Antalya, Turkey, Sep. 27 – Oct. 4, 2009.
  - 38.** Studies of the Nuclear Landscape and the Nuclear Equation of State (EOS) using Peripheral Heavy-Ion Collisions at Fermi Energies. G.A. Souliotis, Invited Seminar, Department of Physics, Aristotle University of Thessaloniki, October 20, 2009.
  - 39.** Studies of the Dynamics/Thermodynamics of Nuclei and Exploration of the Limits of Nuclear Stability. G.A. Souliotis, Invited Seminar, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Jan. 18, 2010.

40. Neutron-Rich Rare-Isotope Production in Peripheral Heavy-Ion Collisions in the Energy Range of 15 MeV/nucleon. G.A. Souliotis, Invited Talk, 19<sup>th</sup> Symposium of the Hellenic Nuclear Physics Society, Thessaloniki, May 28-29, 2010.
41. Approaching Neutron-Rich Nuclei towards the R-process Path in Peripheral Heavy-Ion Collisions at 15 MeV/nucleon. G.A. Souliotis, Invited Talk, 20<sup>th</sup> Symposium of the Hellenic Nuclear Physics Society, NTUA, Athens, May 27-28, 2011.
42. Production of Neutron-Rich Nuclei towards the R-process Path in Peripheral Heavy-Ion Collisions at 15 MeV/nucleon. G.A. Souliotis, Invited Seminar, Cyclotron Institute, Texas A&M University, College Station, Texas, USA, August 16, 2011.
43. Approaching neutron-rich nuclei towards the r-process path in deep-inelastic collisions at 15 MeV/nucleon. G.A. Souliotis, Invited Talk presented at the 3<sup>d</sup> International Conference on Nuclear Fragmentation (NUFRA-2011), Antalya, Turkey, October 2-9, 2011.
44. Approaching r-process path nuclei in peripheral heavy-ion collisions at 15 MeV/nucleon. G.A. Souliotis, Invited Talk presented at the Dynamical Aspects of Nuclear Fission (DANF-2011), Smolenice, Slovakia, October 17-21, 2011.
45. Studies of the process of N/Z equilibration in peripheral heavy-ion collisions at 15 MeV/nucleon. G.A. Souliotis, Invited Talk, 21<sup>th</sup> Symposium of the Hellenic Nuclear Physics Society, NCSR 'Demokritos', Athens, May 27-28, 2012.
46. Studies of N/Z equilibration via heavy-residue isoscaling. G.A. Souliotis, Invited Talk presented at the International Workshop on Nuclear Dynamics and Thermodynamics (in honor of Prof. Joe Natowitz), Physics Department, Texas A&M University, College Station, Texas, 19-22 Aug. 2013.
47. Production of Neutron-Rich Nuclei toward the R-process Path in Peripheral Heavy-Ion Collisions in the Energy Range 15-25 MeV/nucleon. G.A. Souliotis, Invited Talk, presented at the ISTROS Conference, Bratislava, Slovakia, September 23-27, 2013.
48. Studies of the process of N/Z equilibration in peripheral and semiperipheral heavy-ion collisions at 15 MeV/nucleon G.A. Souliotis, Invited Talk presented at the 4<sup>th</sup> International Conference on Nuclear Fragmentation: from Basic Research to Applications (NUFRA-2013), Kemer (Antalya), Turkey, Sep. 30-Oct. 6, 2013.

## Keywords

Nuclear physics, nuclear chemistry, nuclear reactions, rare isotope production, neutron drip line, Monte Carlo simulations, radiation detectors, data acquisition, data analysis, proton therapy, heavy-ion therapy, hadron therapy.