

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Materials Science and Engineering

Pierre F. Poudeu-Poudeu, associate professor of materials science and engineering, with tenure, Department of Materials Science and Engineering, College of Engineering, is recommended for promotion to professor of materials science and engineering, with tenure, Department of Materials Science and Engineering, College of Engineering.

Academic Degrees:

- Ph.D. 2004 Dresden University of Technology, Inorganic Solid-State Chemistry, Dresden, Germany
M.S. 1999 University of Yaoundé-I, Inorganic and Materials Chemistry, Yaounde, Cameroon
M.S. 1998 University of Yaoundé-I, Inorganic Chemistry, Yaounde, Cameroon
B.S. 1996 University of Yaoundé-I, Chemistry, Yaounde, Cameroon

Professional Record:

- 2015-present Associate Professor with tenure, Department of Materials Science and Engineering, University of Michigan
2011-2015 Assistant Professor, Department of Materials Science and Engineering, University of Michigan
2010-2011 Assistant Professor, Advanced Materials Research Institute, University of New Orleans, New Orleans, LA
2007-2011 Assistant Professor, Department of Chemistry, University of New Orleans, LA
2006-2007 Post-doctoral Research Associate, Chemistry, Northwestern University, Evanston, IL
2004-2006 Post-doctoral Research Associate, Chemistry, Michigan State University, East Lansing, MI

Summary of Evaluation:

Teaching: Professor Poudeu is a dedicated and committed teacher and mentor who has made significant new contributions since he was receiving tenure in 2015 and has demonstrated a sincere interest in continuous improvement in undergraduate and graduate education. He employed methods that he previously developed in his lab and lecture courses to bring team- and project-based learning into the classroom experience. Professor Poudeu has devoted unusual effort to mentoring a broad range of students in research, including over 50 undergraduates, two high school students, and eight M.S. students at Michigan. He has mentored seven Ph.D. students to graduation, and currently advises four. Professor Poudeu treats his students well and they clearly appreciate his significant role in their research success. He brings his passion for his research to all students, regardless of their level of achievement.

Research: Professor Poudeu has successfully carved out a well-respected niche in the field of thermoelectric materials. He has established a vibrant research group that has earned an

excellent reputation for innovation, creativity, and productivity in materials science and solid state chemistry both within the United States and around the world. Professor Poudeu has been very productive both in terms of his efforts to publish novel, important scientific contributions and his funding. He has published approximately 30 articles in high-impact journals since achieving tenure in 2015. In that same time, he generated as the lead principal investigator approximately \$2.5M in research funding from DoE and NSF. His 2018 receipt of an NSF Special Creativity Extension Award emblemizes his scholarship and research vision.

Recent and Significant Publications:

- JS Lopez, H Djieutedjeu, B Buchanan, KGS Ranmohotti, A Page, C Uher, PFP Poudeu, “Engineering Magnetic Transitions in $\text{Fe}_{1-x}\text{Sn}_x\text{Bi}_2\text{Se}_4$ n-Type Ferromagnetic Semiconductors through Chemical Manipulation of Spatial Separation between Magnetic Centers,” *Chemistry of Materials*, 31, 3507-3518, 2019.
- R Lu, JS Lopez, Y Liu, TP Bailey, AA Page, S Wang, C Uher, PFP Poudeu, “Coherent magnetic nanoinclusions induce charge localization in half-Heusler alloys leading to high- T_c ferromagnetism and enhanced thermoelectric performance,” *Journal of Materials Chemistry A*, 7, 11095-11103, 2019.
- H Djieutedjeu, JS Lopez, R Lu, B Buchanan, X Zhou, H Chi, KGS Ranmohotti, C Uher, PFP Poudeu, “Charge Disproportionation Triggers Bipolar Doping in $\text{FeSb}_{2-x}\text{Sn}_x\text{Se}_4$ Ferromagnetic Semiconductors, Enabling a Temperature-Induced Lifshitz Transition,” *Journal of the American Chemical Society*, 141, 9249-9261, 2019.
- EM Chen, L Williams, A Olvera, C Zhang, M Zhang, G Shi, J Heron, L Qi, LJ Guo, E Kioupakis, PFP Poudeu, “Sustainable p-type copper selenide solar material with ultra-large absorption coefficient,” *Chemical Science*, 9, 5405-5414, 2018.
- AA Olvera, NA Moroz, P Sahoo, P Ren, TP Bailey, AA Page, C Uher, PFP Poudeu, “Partial indium solubility induces chemical stability and colossal thermoelectric figure of merit in Cu_2Se ,” *Energy and Environmental Science*, 10, 1668-1676, 2017.

Service: Professor Poudeu has served on several department committees including the faculty search committee since 2015 and he has led the department’s efforts to improve their Master’s program offerings. As chair of the Master’s program committee, he has increased the enrollment to 41 in AY19-20 from 13 in AY15-16. He has also increased diversity in the M.S. program. He has an exceptional record of mentoring and outreach that has affected graduate and undergraduate students here and from other institutions and high school students and their teachers. His dedication to diversity, equity, and inclusion are exemplary and has been recognized nationally at a panel at the NSF Minority Faculty Development Workshop. Externally, Professor Poudeu has a steady record of editorial activities. Since 2011, he has been an associate editor for *Reviews in Advanced Sciences and Engineering*, and a member of the editorial board for the *Journal of Nanoengineering and Nanomanufacturing*.

External Reviewers:

Reviewer A: “I have not a smidge of doubt that Prof. Poudeu’s dossier would receive a positive outcome at my institution. Prof. Poudeu, you have a rising star.”

Reviewer B: “Personally I would rank him in the top-20% of materials scientists in the US who were promoted to Professor with tenure in recent years. ... I am convinced he would receive this

promotion at my university, and I strongly recommend him for promotion at the University of Michigan as well.”

Reviewer C: “I give my strongest recommendation that he be promoted to Professor with Tenure at the University of Michigan.”

Reviewer D: “...I think that Prof. Poudeu-Poudeu merits the promotion to Professor, which I can full-heartedly recommend.”

Reviewer E: “While it is hard to comment on his effectiveness as an instructor, all evidence points to his caring deeply about undergraduate curricula. All of the above join hands with his high and original research productivity to suggest that this promotion is strongly merited.”

Summary of Recommendation: Professor Poudeu is an accomplished leader in the field of processing and characterization of inorganic energy materials, particularly thermoelectrics. He is a dedicated and committed teacher and mentor. It is with the support of the College of Engineering Executive Committee that I recommend Pierre F. Poudeu-Poudeu for promotion to professor of materials science and engineering, with tenure, Department of Materials Science and Engineering, College of Engineering.



Alec D. Gallimore, Ph.D.
Robert J. Vlastic Dean of Engineering
College of Engineering

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