

## EDUCATION

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University of Arkansas, Fayetteville, AR Doctor of Philosophy in Microelectronics Photonics	December 2019
Kent State University, Kent, HO Master of Art in physics science	May 2016
Al-Nahrain University, Baghdad, Iraq Master of science in physics science	December 2006
Al-Nahrain University, Baghdad, Iraq Bachelor of Science in physics science	June 2003

## TEACHING EXPERIENCE

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Department of physics, University of Mustansiriyah, Baghdad, Iraq Assistant Lecturer: <ul style="list-style-type: none"><li>Developed curriculum from scratch for Microsoft Office programs class.</li><li>Wrote guide in Arabic language and available online for free where read by 15607 users.</li><li>Lead lecture and Lab.</li></ul>	October 2010 - June 2012
Department of physics, University of Arkansas, Fayetteville, AR Lecturer: <ul style="list-style-type: none"><li>Assistant lecturer for the class Electricity.</li></ul>	January 2019 - December 2019
Department of physics, University of Mustansiriyah, Baghdad, Iraq <ul style="list-style-type: none"><li>Teaching Electricity and Magnetism.</li></ul>	January 2020 – June 2020
Department of physics, University of Mustansiriyah, Baghdad, Iraq <ul style="list-style-type: none"><li>Teaching Modern Physics.</li></ul>	September 2020 – June 2021
Department of physics, University of Mustansiriyah, Baghdad, Iraq	October 2021 – present

## RESEARCH EXPERIENCE

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Department of physics, Al-Nahrain University, Baghdad, Iraq <ul style="list-style-type: none"><li>Calculated the atomic scattering factor for K-shell and total atom for three and four electron systems.</li><li>Implemented Hartree-Fock method to investigate the one particle radial density distribution function.</li><li>Analyzed three and four electron systems into three-pairs electronic wave functions.</li><li>Identified the relation between the atoms for one particle radial density distribution function.</li></ul>	October 2010 - June 2012
Kent State University, Kent, OH <ul style="list-style-type: none"><li>Investigated Realistic Boltzmann Equation for ultra-relativistic heavy-ion collisions.</li></ul>	May 2015 – May 2016
University of Arkansas, Fayetteville, AR Graduate Research Assistant <ul style="list-style-type: none"><li>Predicted photostriction phenomena in two-dimensional materials using density functional theory.</li><li>Investigated new Heusler alloys for thermoelectric and spintronic applications.</li><li>Improved the efficiency of the Heusler alloys to convert the waste heat to electricity.</li><li>Enhancing the thermoelectric efficiency of <math>\beta</math>-InSe semiconductor by doping.</li></ul>	August 2016 – December 2019

## SCHOLARSHIPS

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The Higher Committee for Education Development in Iraq	January 2013 - December 2013
• Studied the English language in the ESL center at Kent State University.	
The Higher Committee for Education Development in Iraq	January 2014 - Spring 2016
• Studied MA in physics science department at Kent State University.	
The Higher Committee for Education Development in Iraq	May 2014 – December 2019
• Studied Doctorate of Philosophy in Microelectronics Photonics at the University of Arkansas.	
Summer Research Fellowship, University of Arkansas	May 2019 – December 2019

## PUBLICATIONS

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- Haleoot R, Paillard C, Kaloni TP, Mehboudi M, Xu B, Bellaiche L, Barraza-Lopez S. Photostrictive two-dimensional materials in the monochalcogenide family. *Physical Review Letters*. 2017 May 30;118(22):227401.
- Haleoot, Raad, and Bothina Hamad. "Ab Initio Investigations of the Structural, Electronic, Magnetic, and Thermoelectric Properties of CoFeCuZ (Z= Al, As, Ga, In, Pb, Sb, Si, Sn) Quaternary Heusler Alloys." *Journal of Electronic Materials* 48, no. 2 (2019): 1164-1173.
- Haleoot R and Hamad B "Thermodynamic and thermoelectric properties of CoFeYGe (Y = Ti, Cr) quaternary Heusler alloys: first principle calculations." *J. Phys. Condens. Matter* 32, no. 075402 (2020).
- Pandit, Abhiyan, Raad Haleoot, and Bothina Hamad "Structural, Electronic and Thermoelectric Properties of Pb<sub>1-x</sub>Sn<sub>x</sub>Te Alloy." *J. Electron. Mater.* (2019).
- Raad, H. E. (2019). Theoretical Investigations of the Electronic, Magnetic, and Thermoelectric Properties of Transition-Metal Based Compounds. Theses and Dissertations Retrieved from <https://scholarworks.uark.edu/etd/3444>
- Haleoot, Raad, Hamad, Bothina "Thermoelectric properties of doped  $\beta$ -InSe by Bi: First Principle Calculations." *Physica B: Condensed Matter*. Accepted (2020).
- Aida Sheibani, Charles Paillard, Abhiyan Pandit, Raad Haleoot, Laurent Bellaiche, Bothina Hamad "Effect of the polar distortion on the thermoelectric properties of GeTe." *J. Phys. Condens. Matter*. Submitted (2020).
- Pandit, Abhiyan, Raad Haleoot, and Bothina Hamad. "Thermal conductivity and enhanced thermoelectric performance of SnTe bilayer." *Journal of Materials Science* 56, no. 17 (2021): 10424-10437.
- Alqurashi, Hind, Raad Haleoot, Abhiyan Pandit, and Bothina Hamad. "Investigations of the electronic, dynamical, and thermoelectric properties of Cd<sub>1-x</sub>Zn<sub>x</sub>O alloys: First-principles calculations." *Materials Today Communications* 28 (2021): 102511.

## PRESENTATIONS

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- Abhiyan Pandit, Raad Haleoot, and Bothina Hamad "Structural, electronic and thermoelectric properties of PbTe-based chalcogenide compounds." *Bulletin of the American Physical Society, APS March Meeting*, (March 2019).
- Aida Sheibani, Raad Haleoot, and Bothina Hamad "Investigation of the structural, electronic and thermoelectric properties of GeX (X= S, Se, Te) monochalcogenides." *Bulletin of the American Physical Society, APS March Meeting*, (March 2019).

## TECHNICAL SKILLS

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- Programming languages and mathematical packages: Shell script, Python, Mathematica.
- Operating systems: Windows, Linux (Ubuntu).