

# CURRICULUM VITAE

University of Idaho

**NAME:** McDonald, Armando Gabriel

**DATE:** April 2, 2023

**RANK OR TITLE:** Distinguished Professor

**DEPARTMENT:** Forest and Sustainable Products Program; Dept. of Forest, Rangeland, and Fire Sciences

**OFFICE LOCATION AND CAMPUS ZIP:** CNR 102D, MS1132

**OFFICE PHONE:** 208-885-9454

**FAX:** 208-885-6564

**EMAIL:** armandm@uidaho.edu

**WEB:** <http://www.uidaho.edu/cnr/frfs/armandomcdonald>

**DATE OF FIRST EMPLOYMENT AT UI:** December 6, 2001

**DATE OF TENURE:** tenured, July 2006

**DATE OF PRESENT RANK OR TITLE:** April, 2023

## EDUCATION BEYOND HIGH SCHOOL:

### Degrees:

Doctor of Philosophy, York University, Toronto, Ontario, Canada. June 1993, Chemistry. Thesis "Lipopolysaccharides from *Campylobacter*," Supervisor: Dr G.O. Aspinnall, Examiner: Dr. J.C. Richards (NRC, Ottawa)

M.Sc., University of Otago, Dunedin, New Zealand, May 1986, Chemistry, with Distinction. Thesis "Glucofructan Polysaccharides," Supervisor: Dr. D.J. Brasch

Post Graduate Diploma in Science in Chemistry, University of Otago, Dunedin, New Zealand, May 1984,

B.Sc., University of Otago, Dunedin, New Zealand, May 1983, Chemistry and Applied Chemistry

### Certificates and Licenses:

Managerial Excellence Programme. Certificate of Practicing Management, December 1999. New Zealand Institute of Management and University of Waikato,

## EXPERIENCE:

### Teaching, Extension and Research Appointments:

April 2023 - , Distinguished Professor, Forest, Rangeland and Fire Sciences Dept., University of Idaho

August 2011- April 2023 , Professor, Forest, Rangeland and Fire Sciences Dept., University of Idaho

July 2006-August 2011, Professor, Forest Products Department, University of Idaho

December 2001-June 2006, Associate Professor, Forest Products Department, University of Idaho.

June 1998-November 2001, Project/Group Leader, Material Discovery, Forest Research.

September 1993-June 1998, Senior Scientist in Wood Materials Chemistry, New Zealand Forest Research Institute.

December 1985-August 1989, Scientist in Carbohydrate Chemistry, New Zealand Forest Research Institute.

## TEACHING ACCOMPLISHMENTS:

### Areas of Specialization:

Renewable materials chemistry

Carbohydrate chemistry & biochemistry

Wood science

Biopolymer and Biomaterials science

Natural products chemistry

**Areas of Specialization: cont.**

Biomass conversion and biofuels

**Courses Taught:**

Wood Composites: FORP502 / FORP436/536 Spring 2002-2007, Fall 2007-2009  
 Biocomposites: FORP436/536 Fall 2010-2013; RMAT436/536 Fall 2014-2019; FSP436/536 2020-22  
 Wood Chemistry, FORP502, Fall 2002  
 Wood Chemistry, FORP438/538, Fall 2003-2006, Spring 2007-2010  
 Lignocellulosic Biomass Chemistry: FORP438/538 Spring 2011, 2013;  
 RMAT438/538 Spring 2014-2020, FSP438/538 2021-23  
 Biomaterials product and process development: FORP491, Spring 2005-2013;  
 RMAT491 Spring 2014-2019, Spring 2020-2023  
 Biomass and Biorefinery BAE504, Fall 2006, Spring 2010  
 Forest Products Issues and Technology FORP100, Fall 2006-2011  
 Introduction to Renewable Materials Issues RMAT100, Fall 2013-2019, Spring 2017-2020  
 Introduction to Forest and Sustainable Products Issues FSP100, Fall 2020-21, Spring 2021-23

**Students Advised:**

Secondary Student Internships:

Casey Cook, HOIST summer internship, 2004

Undergraduate Students:

Joshua Carey, FSP senior project, University of Idaho, 2022  
 Evan Wasmer, FSP senior project, University of Idaho, 2021  
 Sierra Talcott, FSP senior project, University of Idaho, 2021  
 Benjamin Uptmor, FSP senior project, University of Idaho, 2021  
 McKenna Dustin, FSP senior project, University of Idaho, 2021  
 Daniel Jokic, FSP senior project, University of Idaho, 2021  
 Talbot Rueppel, RMAT senior project, University of Idaho, 2020  
 Dalan Kerr, RMAT senior project, University of Idaho, 2019  
 Karson Leggett, RMAT senior project, University of Idaho, 2019  
 Kyle McCullough, RMAT senior project, University of Idaho, 2019  
 Chase Behrens, RMAT senior project, University of Idaho, 2018  
 Veronica Hughes, ECB senior thesis, University of Idaho, 2017  
 Isaac Shaw, RMAT senior project, University of Idaho, 2017  
 Jennifer Mehrhoff, RMAT senior project, University of Idaho, 2017  
 Bryce Dinger, RMAT senior project, University of Idaho, 2016  
 David Zack, RMAT summer intern, University of Idaho, 2014  
 Nikki Yates, ENV5 senior project, University of Idaho, 2012  
 Alan Kycek, Directed Studies, FORP, University of Idaho, 2011  
 Brandon Higgins, Directed Studies, FORP, University of Idaho, 2010  
 Jon Slette, Directed Studies, FORP, University of Idaho, 2010  
 Justin Pattison, Directed Studies, FORP, University of Idaho, 2003  
 Brent Jacobson, Directed studies, FORP, University of Idaho, 2003  
 Stephanie Weal, 3<sup>rd</sup> and 4<sup>th</sup> year project, BscTech University of Waikato, New Zealand, 2001  
 Cathy Risch, 4<sup>th</sup> year Bsc project, Ecole Normale Supérieure, France, 2001  
 Brendan Lee, 3<sup>rd</sup> and 4<sup>th</sup> year project, BscTech, University of Waikato, New Zealand, 1997  
 Greg Findleyson, 3<sup>rd</sup> year project, BscTech, University of Waikato, New Zealand, 1996  
 Marc Fernandez, 4<sup>th</sup> year project, BSc, Victoria University, Canada, 1995

Graduate Students:

Currently advising-major professor:

Maryam Abassi, Ph.D., Environmental Science, University of Idaho, 2019-  
 Berlinda Orji, Ph.D. Environmental Science, University of Idaho, 2020-  
 Krystal Snyder, Ph.D. Natural Resources, University of Idaho, 2019-  
 Japneet Kukal, Ph.D. Environmental Science, University of Idaho, 2022-  
 Harrison Appiah, Ph.D. Environmental Science, University of Idaho, 2022-  
 Sodiq Yusuf, Ph.D. Environmental Science, University of Idaho, 2023-

## Currently advising-major professor (cont):

Nnameka Ewurum, M.S. Environmental Science, University of Idaho, 2023-

## Graduate Students (cont):

## Advised to completion of degree-major professor:

Sang Yeob Lee, M.S., Forest Products, University of Idaho, December 2002  
 Anand Mangalam, M.S., Forest Products, University of Idaho, 2002-2005  
 Smith Sundar, M.S., Forest Products, University of Idaho, 2003-2005  
 Andres Soria, Ph.D., Forest products, University of Idaho, 2002-2005  
 Carter Fox, M.S., Forest Products, University of Idaho, 2004-2006  
 Lance Gallagher, M.S., Forest Products, University of Idaho, 2003-2006  
 Karthik Pillai, M.S., Forest Products, University of Idaho, 2004-2007  
 James Fabiyi, Ph.D., Forest Products, University of Idaho, 2004-2007  
 Ayiguli Keyoumu, M.S., Forest Products, University of Idaho, 2005-2007  
 Lina Ma, M.S., Forest Products, University of Idaho, 2005-2007  
 Clay Dodson., M.S. Environmental Science, University of Idaho, 2006-2008  
 Shengjun Hu, M.S., Forest Products, University of Idaho, 2008-2010  
 Janet Dai, M.S., Forest Products, University of Idaho, 2008-2010  
 Noridah Osman, Ph.D., Forest Products, University of Idaho, 2005-2010  
 Liqing Wei, M.S., Forest Products, University of Idaho, 2009-2011  
 Guanqun Luo, M.S., Natural Resources, University of Idaho, 2010-2012  
 Jowita Laniak, Ph.D., Environmental Science, University of Idaho, 2007-2012  
 Janet Dai, Ph.D., Natural Resources, University of Idaho, 2010-2014  
 Hui Li, Ph.D., Natural Resources, University of Idaho, 2010-2014  
 Yinglei Han, M.S., Natural Resources, University of Idaho, 2013-2014  
 Shaobo Liang, Ph.D., Environmental Science, University of Idaho, 2010-2014  
 Liqing Wei, Ph.D., Natural Resources, University of Idaho, 2011-2015  
 Eric Young, M.S., Environmental Science, University of Idaho, 2015-2017  
 Farid Sotoudehniakarani, M.S., Natural Resources, University of Idaho, 2016-2017  
 Abdulbaset Alayat, Ph.D., Environmental Science, University of Idaho, 2013-2018  
 Berlinda Orji, M.E. Chemical Engineering, University of Idaho, 2019-2020  
 Farid Sotoudehniakarani, Ph.D., Natural Resources, University of Idaho, 2018-2021  
 Gurkeerat Kukal, M.S., Environmental Science, University of Idaho, 2019-2021  
 Dikshya Pokhrel, M.S., Natural Resources, University of Idaho, 2019-2021  
 Lucky Ewurum, M.S., Environmental Science, University of Idaho, 2019-2021  
 Endalkachew Mengisite, Ph.D., Environmental Science, University of Idaho, 2019-2022

## Served on graduate committee:

Robert Carne, Ph.D. Mechanical Engineering, University of Idaho, 2022 -  
 Courage Alorbu, Ph.D., Natural Resources, University of Idaho, 2022 -  
 Liang Liang, Ph.D., Natural Resources, University of Idaho, 2022 -  
 Robert Carne, M.S. Mechanical Engineering, University of Idaho, 2021-2022(completed)  
 Shreyas Kolpkar, Ph.D. Mechanical Engineering, Michigan Tech, 2019-2021 (completed)  
 Courage Alorbu, M.S., Natural Resources, University of Idaho, 2020-2021(completed)  
 Conal Thie, M.S. Mechanical Engineering, University of Idaho, 2020-2021(completed)  
 Chi-Jui Kuo, M.S., Natural Resources, University of Idaho, 2020-2021(completed)  
 Osinana Johnson, M.S., Natural Resources, University of Idaho, 2020-2021(completed)  
 Adam O'Keeffe, M.S. Biological Engineering, University of Idaho, 2019-21(completed)  
 Connor Hill, Ph.D. Material Science, University of Idaho, 2019-2021(completed)  
 Andrés Bretón Toral, Ph.D. Biotechnology, Instituto Politecnico Nacional, 2017-  
 Zhuo Xu, Ph.D. Mechanical Engineering, Michigan Tech, 2019-2021 (completed)  
 Olaniyi Arowojolu, Ph.D., Civil Engineering, University of Idaho, 2017-2020 (completed)  
 Zahra Mahdieh, Ph.D. Material Science, University of Montana, 2016-2020 (completed)  
 Brian Harris, Ph.D., Chemistry, University of Idaho, 2005-  
 Nicholas Guho, Ph.D., Civil Engineering, University of Idaho, 2010-  
 Yinglei Han, Ph.D., Biosystems Engineering, WSU, 2015-2020 (completed)  
 Moorti Paladugula, M.S. Food Science, University of Idaho, 2018-2019 (completed)  
 Stas Zinchik, Ph.D. Mechanical Engineering, Michigan Tech, 2019 (completed)

## Graduate Students (cont):

## Served on graduate committee:

Fahmid Tousif, M.S. Civil Engineering, University of Idaho – 2018 (completed)  
Erik Johnston, Ph.D. Material Science, University of Montana, 2015-2018 (completed)  
Mohammad Khan, M.E., Civil Engineering, University of Idaho, 2016-2017 (completed)  
Derek Probst, M.E., Civil Engineering, University of Idaho, 2015-2016 (completed)  
Samjhana Dahal, M.S., Food Science, University of Idaho, 2015-2016 (completed)  
Mohammadali Azadfar., Ph.D. Biosystems Eng, WSU, 2013-2016 (completed)  
Andrea Hanson, Ph.D., MMBB, University of Idaho, 2013-2015 (completed)  
Daniel Howe, Ph.D., Civil Eng, WSU, 2007-2015 (completed)  
Adetayo Mustapha, Ph.D., Chemistry, University of Idaho, 2013-2015 (completed)  
Zheting Bi, Ph.D., Biological & Agricultural Eng., UI, 2013-2015 (completed)  
Odgerel Bumandalai, M.S. Biosystems Eng, WSU, 2013-2014 (completed)  
Ryan Rehder, M.E., Civil Engineering, University of Idaho, 2011-2014 (completed)  
Hesham Tantawy, Ph.D. Chemical Engineering, UI, 2010-2014 (completed)  
Carl Morrow, Ph.D., Forest Products, University of Idaho, 2009-2013 (completed)  
Hugo Araujo Lino., M.S., Chemistry, University of Idaho, 2012-2013 (completed)  
Zhouhong Wang, Ph.D., Biosystems Eng, WSU, 2010-2013 (completed)  
Chao-Feng Hsieh, Ph.D., Food Science, University of Idaho, 2009-2013 (completed)  
Shaui Zhou, Ph.D., Biosystems Eng, WSU, 2010-2013 (completed)  
Tushar Jain., Ph.D., Biological & Agricultural Eng., UI, 2009-2012 (completed)  
Tova Sardot, Ph.D., Chemistry, University of Montana 2008-2012 (completed)  
Christoph Chauwecker, Ph.D., Wood Sci. Eng, OSU, 2007-2011 (completed)  
Keegan Duff., M.S., Biological & Agricultural Eng., UI, 2009-2011 (completed)  
Wei Chen Yu, M.S., Food Science, University of Idaho, 2005-2010 (completed)  
Robert Johnson, M.S., Biosystems Eng, WSU, 2007-2009 (completed)  
Mackenzie Ellison, M.S., PSES, University of Idaho, 2008-2010 (completed)  
Nicholas Guho, M.E., Civil Engineering, University of Idaho, 2009-2010 (completed)  
Zachary Dobroth, M.E., Civil Engineering, University of Idaho, 2009-2010 (completed)  
Isabela Reiniati, M.S., Material Science, WSU, 2007-2009 (completed)  
Carl Morrow, M.S., Forest Products, University of Idaho, 2007-2009 (completed)  
Joey Charboneau, M.S., Chemistry University of Idaho, 2007-2009 (completed)  
Hyun-Seok Kim, Ph.D., Food Science, University of Idaho, 2005-2009 (completed)  
Przemysław Brejna, Ph.D., Chemistry, University of Idaho, 2007-2010 (completed)  
Naresh Pachauri, M.S., Bio & Agric. Eng., University of Idaho, 2005-2008 (completed)  
Erica Rude, M.S., Materials Science, WSU, 2005-2007 (completed)  
Sudip Chowdury, M.S., Civil Engineering, WSU, 2004-2006 (completed)  
Ben LaFrentz, Ph.D. Fish & Wildlife, University of Idaho, 2004-2007 (completed)  
Wei Lao, Ph.D. Biosystems Engineering, WSU 2004-2007 (completed)  
Jinwu Wang, Ph.D., Civil Engineering, WSU, 2004-2007 (completed)  
Carla Blengeri-Oyarce, M.S., Forest Products, UI, 2004-2006 (completed)  
Jeremy Higley, M.S., Food Science, University of Idaho, 2003-05 (completed)  
Cathy Hunt, M.S., Chemistry, University of Idaho, 2003-2005 (completed)  
Holton Quinn, M.S, Chemical Engineering, University of Idaho, 2003-2007 (completed)  
Leslie Ganus, M.S., Forest Products, University of Idaho, 2001-2003 (completed)  
Sharlene Peterson, Ph.D., Engineering, University of Auckland, 1998-2007 (completed)  
Stephanie Weal, M.S., Engineering, Waikato University 2003-2006 (completed)  
Erik Coats, Ph.D., Civil Engineering, WSU, 2002-2005 (completed)  
Ben Harlow, M.S., Forest Resource Management, UI, 2003-05 (completed)  
Catherine Riddle, M.S., Chemistry, University of Idaho, 2002-04 (completed)  
Kirk Kludt, M.E., Civil Engineering, WSU, 2001-03 (completed)  
Jonathon Songster, M.S., Forest Products, University of Idaho, 2002-04 (completed)  
Ralf Moeller, Ph.D., Biology, University of Auckland, 1998-2003 (completed)  
Xiaowen Yuan, Ph.D., Engineering, University of Auckland, 1999-2003 (completed)  
Brendan Lee, M.Sc., Chemistry, University of Waikato, 2000-03 (completed)  
Ali Abdallah, M.Sc., Technology, University of Waikato, 2000-03 (completed)  
Brian Harris, M.S., Chemistry, University of Idaho, Feb 2003 (completed)  
Jason Brandt, M.S., Forest Products, University of Idaho, 2001-03 (completed)

## Graduate Students (cont):

Served on graduate committee:

Suzie Carnachan, Ph.D., Biology, University of Auckland, 1996-2000 (completed)

## Courses Developed:

Wood composites FORP436/536

Biocomposites RMAT436/536 and FSP436/536

Wood chemistry FORP438/538

Lignocellulosic biomass chemistry RMAT438/538 and FSP438/538

Biomaterials product and process development RMAT491 and FSP491

Biomass and Biorefinery BAE504

Introduction to Renewable Materials Issues "Design Project" RMAT100

## Courses Developed cont:

Introduction to Forest and Sustainable Products Issues "Design Project" FSP100

**SCHOLARSHIP ACCOMPLISHMENTS:****Publications, Exhibitions, Performances, Recitals:****Refereed/Adjudicated (229):**

- Orji, B., McDonald, A.G. (2023) Flow, curing and mechanical properties of thermoset resins - Wood fiber blends for potential additive manufacturing applications. *Wood Material Science and Engineering*. <https://doi.org/10.1080/17480272.2022.2155873>
- Dunn, L., Luo, H., Subedi, N.R., McDonald, A.G., Christodoulides, D.N., Vasdekis, A.E. (2023) Video-Rate Raman-based Metabolic Imaging by Airy Light-Sheet Illumination and Photon-Sparse Detection. *PNAS*. 120(9): e2210037120. <https://www.pnas.org/doi/10.1073/pnas.2210037120>
- Orgi, B.O., Thie, C., Baker, K., Maughan, M.R., McDonald, A.G. (2023) Wood fiber - sodium silicate mixtures for additive manufacturing of composite materials. *European Journal of Wood and Wood Products*. 81: 45–58. DOI: 10.1007/s00107-022-01861-z
- Arowojolu, O., Ibrahim, A., McDonald, A. (2023) The effect of including biomass on the rheological and pozzolanic properties of Portland limestone cement- case study. *Sustainable Structures*. 3(1): 000024. DOI: 10.54113/j.sust.2023.000024
- Sotoudehnia, F., McDonald, A.G. (2022) Upgrading mixed agricultural plastic and lignocellulosic waste to liquid fuels by catalytic pyrolysis. *Catalysts*. 12: 1381. <https://doi.org/10.3390/catal12111381>
- Ewurum, L.I., Jokic, D., Bar-Ziv, E., McDonald, A.G. (2022) Evaluation of the rheological and mechanical properties of mixed plastic waste-based composites. *Waste & Biomass Valorization*. 13: 4625–4637. <https://doi.org/10.1007/s12649-022-01794-x>
- Abbasi, M., Pokhrel, D., Mengistie, E., Coats, E.R., McDonald, A.G. (2022) Effect of 3-hydroxyvalerate content on Thermal, Mechanical, and Rheological properties of Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) biopolymers produced from fermented dairy manure. *MDPI-Polymers*. 14: 4140. <https://doi.org/10.3390/polym14194140>
- Xu, Z., Kamran, M., Ierulli, V., Bar-Ziv, E., McDonald, A.G. (2022) Thermal degradation and organic chlorine removal from mixed plastic wastes. *Energies*. 15: 6058. <https://doi.org/10.3390/en15166058>
- Struths, E., Sotoudehnia, F., Mirkouei, A., McDonald, A.G., Ramirez-Corredores, M.M. (2022) Effect of Feedstocks and Free-Fall Pyrolysis on Bio-oil and Biochar Attributes. *Journal of Applied and Analytical Pyrolysis*. 166: 105616 <https://doi.org/10.1016/j.jaap.2022.105616>
- Nemati, S., Sigh, B., Dhuey, S.D., McDonald, A.G., Weinreich, D., Vasdekis, A.E. (2022) Density fluctuations yield distinct growth, homeostasis, and fitness effects in single bacteria. *Communications Biology*. 5: 397. <https://doi.org/10.1038/s42003-022-03348-2>
- Abbasi, M., Coats, E.R., McDonald, A.G. (2022) Green solvent extraction and properties characterization of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) biosynthesized by mixed microbial consortia fed fermented dairy manure. *Bioresource Technology Reports*. 18: 101065. <https://doi.org/10.1016/j.biteb.2022.101065>

- Khan, M.S, Kassem, E., McDonald, A.G., Sirin, O., Aston, D. E. (2022) Comparative characterization of field and laboratory-aged binder modified with antioxidant additives and copolymers using FTIR and GPC. *Journal of Transportation Engineering, Part B: Pavements*. 148(2): 04022032. DOI: [10.1061/JPEODX.0000376](https://doi.org/10.1061/JPEODX.0000376)
- Mengistie, E., Alayat, A.M., Sotoudehnia, F., Bokros, N., DeBolt, S., McDonald, A.G. (2022) Evaluation of Cell Wall Chemistry of Della and its Mutant Sweet Sorghum Stalks. *Journal of Agricultural & Food Chemistry*. 70(5): 1689-1703. <https://doi.org/10.1021/acs.jafc.1c07176>
- Kukal, G., Vasdekis, A.E., McDonald, A.G. (2022). Raman-probes for monitoring metabolites and nutrient fate in *Yarrowia lipolytica* using deuterated glucose. *Biocatalysis and Agricultural Biotechnology*. 39: 102241. <https://doi.org/10.1016/j.bcab.2021.102241>
- Wei, L., Cappellazzi, J., Manning, M., McDonald, A.G., Foster, S., Morrell, J.J. (2022) Long term outdoor weathering evaluation of wood plastic composites. *European Journal of Wood and Wood Products*. 80: 23–34. DOI [10.1007/s00107-021-01762-7](https://doi.org/10.1007/s00107-021-01762-7)
- Balogun, A. O., Adeleke, A. A., Ikubanni, P. P., Adegoke, S.O., Alayat, A.M., McDonald, A.G. (2022) Study on kinetics, combustion characteristics and thermodynamic parameters of thermal degradation of Guinea grass (*Megathyrsus maximus*) in N<sub>2</sub>-pyrolytic and oxidative atmospheres. *Sustainability*. 14: 112. <https://doi.org/10.3390/su14010112>
- Mengistie, E., Alayat, A.M., Sotoudehnia, F., Bokros, N., DeBolt, S., McDonald, A.G. (2021) Fatty acid profiles-based chemometrics to differentiate metabolic variations in sorghum. *ACS-Food Science & Technology*. 1 (11): 2127–2134. <https://doi.org/10.1021/acsfoodscitech.1c00320>
- Lipeh, S., Schimleck, L.R., Mankowski, M.E., McDonald, A.G., Morrell, J.J. (2021) ATR-FTIR study of Alaska yellow cedar extractives and relationship with their natural durability. *Forests*. 12, 1692. <https://doi.org/10.3390/f12121692>
- Jiang, S., Xu, Z., Kamran, M., Zinchik, S., Paheding, S., McDonald, A.G., Bar-Ziv, E., Zavala, V.M. (2021) Using ATR-FTIR spectra and convolutional neural networks for characterizing mixed plastic waste. *Computers and Chemical Engineering*. 155: 107547. <https://doi.org/10.1016/j.compchemeng.2021.107547>
- Subedi, N.R., Yaraghi, S., Jung, P.S., Kukal, G., McDonald, A.G., Christodoulides, D.N., Vasdekis, A.E. (2021) Airy Light-Sheet Raman Imaging. *Optics Express*. 29(20): 31941-31951. <https://doi.org/10.1364/OE.435293>
- Struhs, E., Mirkouei, A., Ramirez-Corredores, M.M., McDonald, A.G., Chacon, M.L. (2021) Overview and technology opportunities for thermochemically-produced bio-blendstocks. *Journal of Environmental Chemical Engineering*. 9(5): 106255. <https://doi.org/10.1016/j.jece.2021.106255>
- Kolapkar, S.S., Zinchik, S., Xu, Z., McDonald, A.G., Bar-Ziv, E. (2021) Thermo-mechanical behavior of integrated torrefaction-extrusion process for pellet production from pre-sorted fiber-plastic wastes. *Energy & Fuels*. 35(15): 12227-12236. <https://doi.org/10.1021/acs.energyfuels.1c01836>
- Balogun, A. O., Adeleke, A. A., Ikubanni, P. P., Adegoke, S.O., Alayat, A.M., McDonald, A.G. (2021) Kinetics modeling, thermodynamics and thermal performance assessments of pyrolytic decomposition of *Moringa oleifera* husk and *Delonix regia* pod. *Scientific Reports*. 11: 13862. [www.nature.com/articles/s41598-021-93407-1](https://www.nature.com/articles/s41598-021-93407-1)
- Alayat, A., Sotoudehnia, F., Gliniewicz, K., McDonald, A.G. (2021). Preliminary screening for natural bioactive compounds in potato peel fermentation broth. *EC Microbiology*. 17(7): 49-66. <https://www.echronicon.com/ecmi/pdf/ECMI-17-01128.pdf>
- Balogun, A. O., Adeleke, A. A., Ikubanni, P. P., Fikayo, YYY., Alayat, A.M., McDonald, A.G. (2021) Physico-chemical characterization, thermal decomposition and kinetic modeling of *Digitaria sanguinalis* under nitrogen and air environments. *Case Studies in Thermal Engineering*. 26: 101138. <https://doi.org/10.1016/j.csite.2021.101138>
- Sotoudehnia, F., Orji, B., Mengistie, E., Alayat, A.M., McDonald, A.G. (2021) Catalytic upgrading of pyrolysis wax-oil obtained from waxed corrugated cardboard using zeolite Y catalyst. *Energy & Fuels*. 35 (11): 9450-9461. DOI: [10.1021/acs.energyfuels.1c00767](https://doi.org/10.1021/acs.energyfuels.1c00767)
- Young, E.L., McDonald, A.G. (2021). Preparation and characterization of biobased lignin-copolyester/amide thermoplastics. *MDPI: Molecules*. 26(9): 2437. <https://doi.org/10.3390/molecules26092437>
- Xu, Z., Kolapkar, S.S., Zinchik, S., Bar-Ziv, E., Ewurum, L., McDonald, A.G., Klinger, J.L., Fillerup, E., Schaller, K., Pilgrim, C. (2021) Bypassing energy barriers in fiber-polymer torrefaction. *Frontiers in Energy Research*. 9: 643371. doi: [10.3389/fenrg.2021.643371](https://doi.org/10.3389/fenrg.2021.643371)

- Hill, C.J., McDonald, A.G., Roll, M.F. (2021) Dienes and diamondoids: Poly(2-(1-adamantyl)-1,3-butadiene) and random copolymers with isoprene via redox-emulsion polymerization and their hydrogenation. *Journal of Applied Polymer Science*. 2021; e50711. <http://doi.org/10.1002/app.50711>
- Balogun, A.O., Sotoudehniakarani, F., McDonald, A.G. (2021) Investigation into coals of different ranks using FTIR and Raman spectroscopy, X-ray diffraction and thermo-kinetic analysis. *International Journal of Oil, Gas and Coal Technology*. 26(4): 453-468.
- DePalma, K., Smith, B., McDonald, A.G. (2021) Synergistic Effects of Processing Parameters on The Biochemical and Physical Properties of Tofu Made from Yellow Field Pea (*Pisum sativum*), as Determined by Response Surface Methodology. *Food Science & Nutrition*. 9: 1132–1142. DOI: 10.1002/fsn3.2091
- Han, Y., Pires, A., Denson, M., McDonald, A.G., Garcia-Perez, M. (2020) Ternary phase diagram of water / bio-oil / organic solvent for bio-oil fractionation. *Energy & Fuels*. 34(12): 16250–16264. DOI: 10.1021/acs.energyfuels.0c03100
- Sotoudehnia, F., Mengistie, E., Alayat, A., McDonald, A.G. (2020) Valorization of waste waxed corrugated cardboard via pyrolysis for recovering wax. *Environmental Progress and Sustainable Energy*. e13566. <https://doi.org/10.1002/ep.13566>
- Guho, N.M., Pokhrel, D., Abbasi, M., McDonald, A.G., Alfaro, M., Brinkman, C.K., Coats, E.R. (2020) Pilot-scale production of poly-3-hydroxybutyrate-co-3-hydroxyvalerate from fermented dairy manure: Process performance, polymer characterization, and scale-up implications. *Bioresource Technology Reports*. 12: 100588. <https://doi.org/10.1016/j.biteb.2020.100588>
- Balogun, A.O., Lasode, O.A., McDonald, A.G. (2020) Higher heating value prediction model from proximate and ultimate analysis data. *Journal of Multidisciplinary Engineering Science and Technology*. 7(8): 12602-12612.
- Xu, Z., Kolapkar, S.S., Zinchik, S., Bar-Ziv, E., McDonald, A.G. (2020) Comprehensive kinetic study of thermal degradation of polyvinylchloride (PVC). *Polymer Degradation and Stability*. 176: 109148. <https://doi.org/10.1016/j.polymdegradstab.2020.109148>
- Lipch, S., Schimleck, L.R., Mankowski, M.A., McDonald, A.G., Morrell, J.J. (2020) Relationship between attenuated total reflectance-Fourier transform infrared spectroscopy of wester juniper and natural resistance to fungal and termite attack. *Holzforschung*. 74(3): 246-259. <https://doi.org/10.1515/hf-2019-0096>
- Mohamed, M., Abdel-Rahim, A., Kassem, E., Chang, K., McDonald, A.G. (2020) Laboratory-based evaluation of pavement marking characteristics. *Journal of Transportation Engineering, Part B: Pavements*. 146(2): 04020016. DOI: 10.1061/JPEODX.0000168
- Orji, B., McDonald, A.G. (2020) Evaluation of the Mechanical, Thermal and Rheological Properties of Recycled Polyolefins Rice-hull Composites. *MDPI-Materials*. 13(3): 667-681. doi:10.3390/ma13030667
- Zinchik, S., Xu, Z., Kolapkar, S., Bar-Ziv, E., McDonald, A.G. (2020) Properties of pellets of torrefied U.S. waste blends. *Waste Management*. 104: 130–138. <https://doi.org/10.1016/j.wasman.2020.01.009>
- Sotoudehniakarani, F., Rabiou, A.B., Alayat, A., McDonald, A.G. (2020) Characterization of bio-oil and biochar from pyrolysis of waste corrugated cardboard. *Journal of Analytical and Applied Pyrolysis*. 145: 104722. <https://doi.org/10.1016/j.jaap.2019.104722>
- Lockner, A., Cook, S., Kimsey, M., McDonald, A.G., Shaw, T. (2019) Toxicity to Douglas-fir tussock moth and foliar concentration of individual monoterpenes in Douglas-fir following fertilization and stand thinning. *Northwest Science*. 93(3-4): 163-170.
- DePalma, K., Smith, B., McDonald, A.G. (2019) Effect of processing conditions, biochemical properties, and microstructure on tofu production from yellow field peas (*Pisum sativum*). *Journal of Food Science*. 84(12): 3463-3472. DOI: 10.1111/1750-3841.14940
- Wu, S., Bashir, M.A., Hsieh, H., McDonald, A.G. (2019) Highly efficient biodiesel conversion from soybean oil using liquid-phase plasma discharge technology. *Transactions of the ASABE*. 64(5): 1129-1134. <https://doi.org/10.13031/trans.13534>
- Adesanwo, J.K., Ajayi, I.S., Ajayi, O.S., Igbeneghu, O.A., McDonald, A.G. (2019) Identification of chemical constituents and evaluation of the antibacterial activity of methanol extract and fractions of the leaf of *Melanthera scandens* (Schum. et Thonn.) Roberty. *Journal of Exploratory Research in Pharmacology*. 4: 31-40. DOI: 10.14218/JERP.2019.00007



- Wang, X., Sotoudehniakarani, F., Yu, Z., Morrell, J.J., Cappellazzi, J., McDonald, A.G. (2019) Evaluation of corrugated cardboard biochar as reinforcing fiber on properties, biodegradability and weatherability of wood-plastic composites. *Polymer Degradation and Stability*. 168: 108955. <https://doi.org/10.1016/j.polymdegradstab.2019.108955>
- Howe, D., Garcia-Perez, M., Taasevigen, D., Rainbolt, J., Albrecht, K., Wei, L., McDonald, A.G., Wolcott, M. (2019) Thermal Pretreatment of a High Lignin SSF Digester Residue to Increase its Softening Point. *Journal of Analytical and Applied Pyrolysis*. 142: 103691. DOI:10.1016/j.jaap.2016.03.012.
- Alayat, A., Sotoudehniakarani, F., McDonald, A.G. (2019) Fermentation of apple pomace using mixed microbial culture to organic acids. *EC Microbiology*. 15(8): 870-884. <https://www.econicon.com/ecmi/pdf/ECMI-15-00706.pdf>
- Alayat, A., Echeverria, E., Sotoudehniakarani, F., McIlroy, D.N., McDonald, A.G. (2019) Alumina coated silica nanosprings (NS) support based cobalt catalysts for liquid hydrocarbon fuel production from syngas. *Materials*. 12: 1810. doi:10.3390/ma12111810.
- Bouhlali, E.D.T., Sellam, K., El Rhaffari, Ramchoun, M., McDonald, A.G., Ouzidan, Y., Ibjibijen, J., Nassiri, L. (2019) Investigation on chemical composition, antioxidant and antimicrobial potential of *Pulicaria mauritanica* essential oil applied by direct addition or vapor contact. *American Journal of Essential Oils and Natural Products*. 7(1): 7-13.
- Wang, X., Yu, Z., McDonald, A.G. (2019) Effect of different reinforcing fillers on properties, interfacial compatibility and weatherability of wood-plastic composites. *Journal of Bionic Engineering*. 16(2): 337-353. DOI: <https://doi.org/10.1007/s42235-019-0029-0>
- Sotoudehniakarani, F., Alayat, A., McDonald, A.G. (2019) Production and characterization of bio-oil and biochar from fast pyrolysis of *Chlorella vulgaris* algae. *Journal of Analytical and Applied Pyrolysis*. 139: 258-273. <https://doi.org/10.1016/j.jaap.2019.02.014>
- Adefisan, O.O., McDonald, A.G. (2019) Evaluation of the strength, sorption and thermal properties of bamboo plastic composites. *Maderas - Ciencia y tecnología*. 21(1): 3-14. DOI: 10.4067/S0718-221X2019005000101.
- Adefisan, O.O., McDonald, A.G. (2018) Evaluation of the flexural strength, sorption, rheological and thermal properties of corncob plastic composites. *International Journal of Advanced Engineering Research and Science*. 5(12): 18-25. <https://dx.doi.org/10.22161/ijaers.5.12.4>
- Balogun, A., Lasode, O., McDonald, A.G. (2018) Thermo-chemical and pyrolytic analyses of Musa spp. residues from the rainforest belt of Nigeria. *Environmental Progress and Sustainable Energy*. 37(6): 1932-1941. DOI: 10.1002/ep.12869.
- Alayat, A., Echeverria, E., McIlroy, D.N., McDonald, A.G. (2018) Characterization and catalytic behavior of EDTA modified silica nanosprings (NS)-supported cobalt catalyst for Fischer-Tropsch CO-hydrogenation. *Journal of Fuel Chemistry and Technology*. 46(8): 957-966.
- Xu, Y., Zinchik, S., Kolapkar, S.S., Bar-Ziv, E., Hansen, T., Conn, D., McDonald, A.G. (2018) Properties of Torrefied U.S. Waste Blends. *Frontiers in Energy Research*. 6: 65. doi: 10.3389/fenrg.2018.00065.
- Luo, S., Cao, J., McDonald, A.G. (2018) Cross-linking of technical lignin via esterification and thermally initiated free radical reaction. *Industrial Crops and Products*. 121: 169-179. <https://doi.org/10.1016/j.indcrop.2018.05.007>.
- Alayat, A., Echeverria, E., McIlroy, D.N., McDonald, A.G. (2018) Enhancement of the catalytic performance of silica nanosprings (NS)-supported iron catalyst with copper, molybdenum, cobalt and ruthenium promoters for Fischer-Tropsch synthesis. *Fuel Processing Technology*. 177: 89-100. <https://doi.org/10.1016/j.fuproc.2018.04.020>.
- Elusiyan, C., Olawuni, I.J., Olugbade, T.A., Orafidiya, O., McDonald, A.G. (2018) Acetylcholinesterase inhibitory effect and characterisation of the essential oil of *Plectranthus aegyptiacus* (Forssk.) C. Chr. growing in Nigeria. *Medicinal & Aromatic Plants*. 7(2): 316-321. DOI: 10.4172/2167-0412.1000316.
- Alayat, A., McIlroy, D.N., McDonald, A.G. (2018) Effect of synthesis and activation methods on the catalytic properties of silica nanospring (NS)-supported iron catalyst for Fischer-Tropsch synthesis. *Fuel Processing Technology*. 169: 132-141. <https://doi.org/10.1016/j.fuproc.2017.09.011>.
- Zhang, X., Bo, X., Cong, L., Wei, L., McDonald, A.G. (2018) Effect of alkaline and neutral deinking on properties of old newspaper fibers and recycled polypropylene composites. *Polymer Composites*. 39(10): 3537-3544. <https://doi.org/10.1002/pc.24374>.



- Balogun, A.O., Lasode, O.A., McDonald, A.G. (2018) Thermo-physical, chemical and structural modifications in torrefied biomass residues. *Waste and Biomass Valorization*. 9(1): 131-138. DOI: 10.1007/s12649-016-9787-7.
- Adefisan, O.O., McDonald, A.G. (2017) Evaluation of wood plastic composites produced from mahogany and teak. *International Journal of Advanced Engineering Research and Science*. 4(12): 27-32. <https://dx.doi.org/10.22161/ijaers.4.12.5>.
- Adefisan, O.O., Wei, L., McDonald, A.G. (2017) Evaluation of plastic composites made with *Laccosperma secundiflorum* and *Eremospatha macrocarpa* canes. *Maderas - Ciencia y tecnología*. 19(4): 517-524. DOI:10.4067/S0718-221X2017005000044.
- Wei, L., Argwal, U.P., Luo, S., Hirth, K.C., McDonald, A.G., Matuana, L.M., Sabo, R.C., Stark, N.M. (2017) Preparation and characterization of the nanocomposites from chemically modified nanocellulose and poly(lactic acid). *Journal of Renewable Materials*. 5(5): 410-422. <https://doi.org/10.7569/JRM.2017.634144>.
- He, B., Van Gerpen, J.H., Morra, M., McDonald, A.G., (2017) Lipid-Based Biorefinery. In: *Bioenergy: Principles and Applications*. Eds. Li, Y., Khanal, S.K., Wiley-Blackwell, IW, USA, Chapter 26.
- Balogun, A., Sotoudehniakarani, F., McDonald, A.G. (2017). Thermo-kinetic, spectroscopic study of brewer's spent grains and characterisation of their pyrolysis products. *Journal of Analytical and Applied Pyrolysis*. 127: 8-16. <https://doi.org/10.1016/j.jaap.2017.09.009>.
- Adesanwo, J.K., Ogundele, S.B., Akinpelu, D.A., McDonald, A.G. (2017) Chemical analyses, antimicrobial and antioxidant activities of extracts from *Cola nitida* seed. *Journal of Exploratory Research in Pharmacology*. 2(3): 67-77. DOI: 10.14218/JERP.2017.00015.
- Oyemitan, I.A., Elusiyani, C.A., Onifade, A.O., Akanmu, M.A., Oyedeji, A.O., McDonald, A.G. (2017) Neuropharmacological profile and chemical analysis of fresh rhizome essential oil of *Curcuma longa* (turmeric) cultivated in Southwest Nigeria. *Toxicology Reports*. 4: 391-398. <http://dx.doi.org/10.1016/j.toxrep.2017.07.001>
- Harries, M.E., McDonald, A.G., Bruno, T. (2017) Measuring the distillation curves of non-homogeneous fluids: method and case study of two pyrolysis oils. *Fuel*. 204: 23-27. <http://dx.doi.org/10.1016/j.fuel.2017.04.066>
- Ogunleye, B.M., Fabiyi, J.S., Fuwape, J.A., McDonald, A.G. (2017) Infrared spectroscopy studies of *Ricinodendron heudelotii* wood for its pulp and paper production potential. *International Journal of Scientific Research in Agricultural Sciences*, 4(1): 023-029. <http://dx.doi.org/10.12983/ijrsas-2017-p0023-0029>
- Liang, S., Wei, L., Passero, M.L., Feris, K., McDonald, A.G. (2017) Hydrothermal liquefaction of laboratory cultivated and commercial algal biomass into crude bio-oil. *Environmental Progress and Sustainable Energy*. 36(3): 781-787. DOI 10.1002/ep.12629
- Bretón-Toral, A., Trejo-Estrada, S.R., McDonald, A.G. (2017) Lactic acid production from potato peel waste, spent coffee grounds and almond shells with undefined mixed cultures isolated from coffee mucilage from Coatepec Mexico. *Fermentation Technology*. 6(1): 139-145. DOI: 10.4172/2167-7972.1000139.
- Stankovikj, F., McDonald, A.G., Helms, G.L., Olarte, M.V., Garcia-Perez, M. (2017) Characterization of woody biomass pyrolysis oils' water soluble fraction. *Energy & Fuels*. 31(2): 1650–1664. DOI: 10.1021/acs.energyfuels.6b02950
- Luo, S., Cao, J., McDonald, A.G. (2017) Esterification of industrial lignin and its effect on the resulting poly(3-hydroxybutyrate-co-3-hydroxyvalerate) or polypropylene based composites. *Industrial Crops and Products*. 97: 281–291. <http://dx.doi.org/10.1016/j.indcrop.2016.12.024>
- Howe, D., Taasevigen, D., Garcia-Perez, M., McDonald, A.G., Li, G., Wolcott, M. (2017) Steam gasification of a thermally pretreated high lignin corn stover simultaneous saccharification and fermentation digester residue. *Energy*. 119: 400-407. <http://dx.doi.org/10.1016/j.energy.2016.12.094>
- Adesanwo, J.K., Adewusi, I.B., Akinpelu, D.A., Wadim, L.M., McDonald, A.G. (2016) Phytochemical screening, antibacterial activity study and isolation of chemicals from *Anacardium occidentale* stem bark extract. *Journal of Pharma Research*. 5(9): 208-212.
- Adefisan, O.O., McDonald, A.G. and Fabiyi, J.S. (2016) Effect of rattan fiber treatments on the strength and sorption properties of cement bonded composites. *Journal of Bamboo and Rattan*. 15(1&2): 1-16.

- Stankovikj, F., McDonald, A.G., Helms, G., Garcia-Perez, M. (2016) Quantification of bio-oil functional groups and evidences of the presence of pyrolytic humins. *Energy & Fuels*. 30: 6505-6524. DOI: 10.1021/acs.energyfuels.6b00994.
- Balogun, A.O., McDonald, A.G. (2016) Decomposition kinetic study, spectroscopic and pyrolytic analyses of *Isoberlinia doka* and *Pinus ponderosa*. *Biomass Conversion and Biorefinery*. 6 (3): 315-324. DOI: 10.1007/s13399-015-0185-3.
- Dziedzic, J.A., McDonald, A.G. (2016) Mass spectrometry data for in vitro protein profiles in early and late stages of Douglas-fir xylogenesis. *Data in Brief*. 7: 1048–1051. doi:10.1016/j.dib.2016.03.083.
- Wysocka, K., Szymona, K., McDonald, A.G., Mamiński, M. (2016) Characterization of the thermal and mechanical properties of lignosulfonate- and hydrolyzed lignosulfonate-based polyurethane foams. *BioResources*. 11(3): 7355-7364. DOI: 10.15376/biores.11.3.7355-7364.
- Faboro, E., Wei, L., Liang, S., McDonald, A.G., Obafemi, G.A. (2016) Phytochemical Analyzes from the Leaves of *Bryophyllum pinnatum*. *European Journal of Medicinal Plants*. 14(3): 1-10. DOI: 10.9734/EJMP/2016/26156.
- Luo, S., Cao, J., McDonald, A.G. (2016) Dicumyl peroxide induced interfacial improvements in biocomposites of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) and lignin via in-situ reactive extrusion. *ACS-Sustainable Chemistry and Engineering*. 4(6): 3465-3476. DOI: 10.1021/acssuschemeng.6b00495
- Wei, L., McDonald, A.G. (2016) A review on grafting of biofibers for biocomposites. *Materials*. 9(4): 303. DOI:10.3390/ma9040303
- Kowalski, R.J., Morrow, C.D., McDonald, A.G., Ganjyal, G. (2016) A new technique for cross-sectional density profiling of extruded foods by X-ray scanning. *Food Structure*. 8: 1–7. <http://dx.doi.org/10.1016/j.foostr.2016.03.001>
- Liang, S., Gliniewicz, K., Gerritsen, A.T., McDonald, A.G. (2016) Analysis of microbial community variation during the mixed culture fermentation of agricultural peel wastes to produce lactic acid. *Bioresource Technology*. 208: 7-12. doi:10.1016/j.biortech.2016.02.054
- Wei, L., McDonald, A.G. (2016) Accelerated weathering studies on the bioplastic poly(3-hydroxybutyrate-co-3-hydroxyvalerate). *Polymer Degradation and Stability*. 126: 93-100. <http://dx.doi.org/10.1016/j.polymdegradstab.2016.01.023>.
- Faboro, E., Wei, L., Liang, S., McDonald, A.G., Obafemi, G.A. (2016) Characterization of dichloromethane and methanol extracts from the leaves of a medicinal plant: *Globimetula oreophila*. *Industrial Crops and Products*. 83: 391-399. <http://dx.doi.org/10.1016/j.indcrop.2016.01.008>
- Han, Y., McIlroy, D.N., McDonald, A.G. (2016) Hydrodeoxygenation of pyrolysis oil for hydrocarbons production using nanosprings based catalysts. *Journal of Analytical and Applied Pyrolysis*. 117: 94-105. doi:10.1016/j.jaap.2015.12.011.
- Smith, S.A., Hughes, E., Coats, E.R., Brinkman, C.K., McDonald, A.G., Harper, J.R., Feris, K., Newby, D. (2016) Toward sustainable dairy waste utilization: Enhanced VFA and biogas synthesis via upcycling algal biomass cultured on waste effluent. *Journal of Chemical Technology & Biotechnology*. 91(1): 113–121. DOI 10.1002/jctb.4706.
- Passero, M.L., Cragin, B., Coats, E.R., McDonald, A.G., Feris, K. (2015) Dairy wastewaters for algae cultivation, polyhydroxyalkanoate reactor effluent versus anaerobic digester effluent. *Bioenergy Research*. 8(4): 1647-1660. DOI 10.1007/s12155-015-9619-9
- Kengne, B-A, F., Alayat, A.M., Luo, G., McDonald, A.G., Brown, J., Smotherman, H., McIlroy, D.N., (2015) Preparation, surface characterization and performance of a Fischer-Tropsch catalyst of cobalt supported on silica nanosprings. *Applied Surface Science*. 359: 508-514. <http://dx.doi.org/10.1016/j.apsusc.2015.10.081>
- Liang, S., McDonald, A.G. (2015) Anaerobic digestion of potato peel wastes for methane production. *Waste Management*.46:197-200. <http://dx.doi.org/10.1016/j.wasman.2015.09.029>
- Liang, S., McDonald, A.G., Coats, E.R. (2015) Lactic acid production from potato peel waste by anaerobic sequencing batch fermentation using undefined mixed culture. *Waste Management*. 45: 51-56. <http://dx.doi.org/10.1016/j.wasman.2015.02.004>
- Wei, L., Liang, S., Coats, E.R., McDonald, A.G. (2015) Valorization of residual bacterial biomass waste after polyhydroxyalkanoate isolation by hydrothermal treatment. *Bioresource Technology*. 198: 739-745. <http://dx.doi.org/10.1016/j.biortech.2015.09.086>

- Wei, L., Stark, N., McDonald, A.G. (2015) Interfacial improvements in biocomposites based on poly(3-hydroxybutyrate) and poly(3-hydroxybutyrate-co-3-hydroxyvalerate) bioplastics reinforced and grafted with  $\alpha$ -cellulose fibers. *Green Chemistry*. 17: 4800-4814. DOI: 10.1039/c5gc01568e.
- Wei, L., Liang, S., Guho, N.M., Hanson, A.J., Smith, M., Garcia-Perez, M., McDonald, A.G. (2015) Production and characterization of bio-oil and biochar from the pyrolysis of residual bacterial biomass from a polyhydroxyalkanoate production process. *Journal of Analytical and Applied Pyrolysis*. 115: 268–278. <http://dx.doi.org/10.1016/j.jaap.2015.08.005>
- Sivasankarapillai, G., Li, H., McDonald, A.G. (2015) Lignin based triple shape memory polymers. *Biomacromolecules*. 16(9): 2735–2742. DOI: 10.1021/acs.biomac.5b00655.
- Dziedzic, J.A., McDonald, A.G. (2015) In-vitro protein expression profile in the early and late stage of Douglas-fir xylogenesis. *Electrophoresis*. 36: 2035-2045. DOI 10.1002/elps.201400561.
- Bi, Z., He, B., McDonald, A.G. (2015) Biodiesel production from green microalgae *Schizochytrium limacinum* via in-situ transesterification. *Energy & Fuels*. 29(8): 5018–5027. DOI: 10.1021/acs.energyfuels.5b00559.
- Dai, J., Coats, E.R., McDonald, A.G. (2015) Multivariate near infrared spectroscopy for predicting polyhydroxybutyrate synthesis by mixed microbial consortia cultured on crude glycerol. *Biomass & Bioenergy*. 81: 490-495. <http://dx.doi.org/10.1016/j.biombioe.2015.08.009>
- Liang, S., Han, Y., Wei, L., McDonald, A.G. (2015) Production and characterization of bio-oil and biochar from pyrolysis of potato peel wastes. *Biomass Conversion and Biorefinery*. 5(3): 237-246. DOI 10.1007/s13399-014-0130-x.
- Reiniati, I., Osman, N.B., McDonald, A.G., Laborie, M-P. (2015) Linear viscoelasticity of hot-pressed hybrid poplar relates to densification and to the in situ molecular parameters of cellulose. *Annals of Forest Science*. 72:693–703. DOI 10.1007/s13595-014-0421-1
- Wei, L., McDonald, A.G. (2015) Thermophysical properties of bacterial poly(3-hydroxybutyrate): characterized by TMA, DSC and TMDSC. *Journal of Applied Polymer Science*. 132(34): 10244-10254. DOI: 10.1002/app.42412.
- Wei, L., McDonald, A.G. (2015) DSC and TMDSC: Multiple melting behavior in annealed bioplastic: poly(3-hydroxybutyrate). TA Instruments application note TA383.
- Li, Y., Pruitt, C., Rios, O., Wei, L., Rock, M., Keum, J., McDonald, A.G., Kessler, M. (2015) Controlled Shape Memory Behavior of a Smectic Main-chain Liquid Crystalline Elastomer. *Macromolecules*. 48: 2864-2874. DOI: 10.1021/acs.macromol.5b00519
- Wei, L., McDonald, A.G. Stark, N.M. (2015) Grafting of bacterial polyhydroxybutyrate (PHB) onto cellulose via in-situ reactive extrusion with dicumyl peroxide. *Biomacromolecules*. 16:1040-1049. DOI: 10.1021/acs.biomac.5b00049.
- Wei, L., Liang, S., McDonald, A.G. (2015) Thermophysical properties and biodegradation behavior of green composites made from polyhydroxybutyrate and potato peel waste fermentation residue. *Industrial Crops & Products*. 69: 91-103. <http://dx.doi.org/10.1016/j.indcrop.2015.02.011>
- Abbas-Abadi, M.S., McDonald, A.G., Haghghi, M.N., Yeganeh, H. (2015) Estimation of pyrolysis product of LDPE degradation using different process parameters in a stirred reactor. *Polyolefins Journal*. 2(1): 39-47.
- Li, H., Sivasankarapillai, G., McDonald, A.G. (2015) Highly biobased thermally-stimulated shape memory copolymeric elastomers derived from lignin and glycerol-adipic acid based hyperbranched prepolymer. *Industrial Crops and Products*. 67: 143-154. <http://dx.doi.org/10.1016/j.indcrop.2015.01.031>
- Balogun, A.O., Lasode, O.A., Li, H., McDonald, A.G. (2015) Fourier transform infrared (FTIR) study and thermal decomposition kinetics of Sorghum bicolor glume and *Albizia pedicellaris* residues. *Waste and Biomass Valorization*. 6(1): 109-116. DOI 10.1007/s12649-014-9318-3.
- Liang, S., Gliniewicz, K., Mendes-Soares, H., Settles, M.L., Forney, L.J., Coats, E.R., McDonald, A.G. (2015) Comparative analysis of microbial community of novel lactic acid fermentation inoculated with different undefined mixed cultures. *Bioresource Technology*. 179: 268–274. doi:10.1016/j.biortech.2014.12.032.
- Dai, J., Gliniewicz, K., Settles, M.L., Coats, E.R., McDonald, A.G. (2015) Influence of organic loading rate and solid retention time on polyhydroxybutyrate production from hybrid poplar hydrolysates using mixed microbial cultures. *Bioresource Technology*. 175: 23–33. <http://dx.doi.org/10.1016/j.biortech.2014.10.049>

- Wei, L. and McDonald, A.G. (2015) Effect of peroxide induced cross-linking on structure and properties of two biopolyesters: poly(3-hydroxybutyrate) and poly(L-lactic Acid). *Journal of Applied Polymer Science*. 132(13): 4233-4247. DOI: 10.1002/app.41724
- Li, H., Sivasankarapillai, G., McDonald, A.G. (2015) Lignin valorization by forming toughened thermally-stimulated shape memory copolymeric elastomers: Evaluation of different industrial lignins. *Journal of Applied Polymer Science*. 132(5): 1505-1517. DOI: 10.1002/app.41389.
- Dai, J., McDonald, A.G., (2014) Production of fermentable sugars from hybrid poplar: Response surface model optimization of a hot-water pretreatment and subsequent enzymatic hydrolysis. *Biomass & Bioenergy*. 71: 275–284. <http://dx.doi.org/10.1016/j.biombioe.2014.09.030>
- Lasode, O.A., Balogun, A.O., McDonald, A.G. (2014) Investigation into isothermal heating of lignocellulosic biomass and their model constituents. *Journal of Sustainable Technology*. 5(1): 101-107.
- Liang, S., McDonald, A.G., Coats, E.R. (2014) Lactic acid production with undefined mixed culture fermentation of potato peel waste. *Waste Management*. 34(11): 2022-2027. <http://dx.doi.org/10.1016/j.wasman.2014.07.009>
- Passero, M., Cragin, B., Hall, A.R., Staley, N., Coats, E.R., McDonald, A.G., Feris, K. (2014) Ultraviolet radiation pre-treatment modifies dairy wastewater, improving its utility as a medium for algal cultivation. *Algal Research*. 6: 98-110. <http://dx.doi.org/10.1016/j.algal.2014.09.008>
- Lasode, O.A., Balogun, A.O., McDonald, A.G. (2014) Torrefaction of some Nigerian lignocellulosic resources and decomposition kinetics. *Journal of Analytical and Applied Pyrolysis*. 109: 47-55. <http://dx.doi.org/10.1016/j.jaap.2014.07.014>
- Pelaez-Samaniego, M.R., Yadama, V., Garcia-Perez, M., Lowell, E., McDonald, A.G. (2014) Effect of temperature during wood torrefaction on the formation of lignin liquid intermediates. *Journal of Analytical and Applied Pyrolysis*. 109: 222–233. <http://dx.doi.org/10.1016/j.jaap.2014.06.008>
- Abbas-Abadi, M.S., Haghighi, M.N., Yeganeh, H., McDonald, A.G., (2014) Evaluation of pyrolysis process parameters on polypropylene degradation products. *Journal of Analytical and Applied Pyrolysis*. 109: 272-277. <http://dx.doi.org/10.1016/j.jaap.2014.05.023>
- Li, H., McDonald, A.G. (2014) Fractionation and characterization of industrial lignins. *Industrial Crops and Products*. 62: 67–76. <http://dx.doi.org/10.1016/j.indcrop.2014.08.013>
- Schauwecker, C.F., McDonald, A.G., Preston, A.F., Morrell, J.J. (2014) Use of iron oxides to influence the weathering characteristics of wood surfaces: A systematic survey of particle size, crystal shape and concentration. *European Journal of Wood & Wood Products*. 72(5): 669-680. DOI 10.1007/s00107-014-0831-7.
- Fabiyi, J.S., McDonald, A.G. (2014) Degradation of polypropylene in naturally and artificially weathered plastic matrix composites. *Maderas Ciencia y tecnologia*. 16(3): 275-290. DOI:10.4067/S0718-221X2014005000021.
- Li, H., Sivasankarapillai, G., McDonald, A.G. (2014) Lignin valorization by forming thermally-stimulated shape memory copolymeric elastomers - partially crystalline hyperbranched polymer as crosslinks. *Journal of Applied Polymer Science*. 131(22):12050-12060. DOI: 10.1002/app.41389.
- Wei, L., Guho, N., Coats, E.R., McDonald, A.G., (2014) Characterization of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) biosynthesized by mixed microbial consortia fed fermented dairy manure. *Journal of Applied Polymer Science*. 131(11):5516-5528. DOI: 10.1002/app.40333.
- Liang, S., McDonald, A.G. (2014) Chemical and thermal characterization of potato peel waste and its fermentation residue as potential resources for biofuel and bioproducts production. *Journal of Agricultural and Food Chemistry*. 62(33): 8421–8429. [dx.doi.org/10.1021/jf5019406](http://dx.doi.org/10.1021/jf5019406)
- Balogun, A.O., Lasode, O.A., McDonald, A.G. (2014) Thermo-analytical and physico-chemical characterization of woody and non-woody biomass from an agro-ecological zone in Nigeria. *Bioresources*. 9(3): 5099-5113. <http://dx.doi.org/10.1016/j.biortech.2014.01.007>
- Luo, G., Kengne, B-A.F., McIlroy, D.N., McDonald, A.G. (2014) A novel nano Fischer-Tropsch catalyst for the production of hydrocarbons. *Environmental Progress & Sustainable Energy*. 33(3): 693–698. DOI 10.1002/ep.11916
- Pohjanlehto, H., Setälä, H.M., Kiely, D.E., McDonald, A.G. (2014) Lignin-xylaric acid-polyurethane based polymer network systems: preparation and characterization. *Journal of Applied Polymer Science*. 131(1): 39714-39721. DOI: 10.1002/app.39714



- Zhou, S., Pecha, B., van Kuppevelt, M., McDonald, A.G., Garcia-Perez, M. (2014) Slow and fast pyrolysis of Douglas-fir lignin: Importance of liquid intermediates formation on products distribution. *Biomass & Bioenergy*. 66: 398–409. <http://dx.doi.org/10.1016/j.biombioe.2014.03.064>
- Wang, Z., Pecha, B., Westerhof, R., Kersten, S., Li, C-Z., McDonald, A.G., Garcia-Perez, M. (2014) Effect of cellulose crystallinity on solid/liquid phase reactions responsible for the formation of carbonaceous residues during slow pyrolysis. *Industrial & Engineering Chemistry Research*. 53(8): 2940–2955. [dx.doi.org/10.1021/ie4014259](http://dx.doi.org/10.1021/ie4014259)
- Zhou, S., Garcia-Perez, M., Pecha, B., McDonald, A.G., Kersten, S., Westerhof, R. (2014) Effect of particle size on the composition of lignin derived oligomers obtained by fast pyrolysis of beech wood. *Fuel*. 125:15-19. <http://dx.doi.org/10.1016/j.fuel.2014.01.016>
- Luo, G., McDonald, A.G. (2014) Conversion of methanol and glycerol into gasoline via ZSM-5 catalysis. *Energy & Fuels*. 28(1):600-606. [dx.doi.org/10.1021/ef401993x](http://dx.doi.org/10.1021/ef401993x)
- Mottern, D.L., Wagner, F.G., McDonald, A.G. (2013) Mitigation of brown stain in Ponderosa pine shop grade using high temperatures used early in kiln schedules. *Forest Products Journal*. 63(1/2):28-30. [doi:10.13073/FPJ-D-12-00054](http://dx.doi.org/10.13073/FPJ-D-12-00054)
- Zhou, S., Garcia-Perez, M., Pecha, B., Kersten, S., McDonald, A.G., Westerhof, R. (2013) Effect of fast pyrolysis temperature on the primary and secondary products of lignin. *Energy & Fuels*. 27(10): 5867–5877. [dx.doi.org/10.1021/ef4001677](http://dx.doi.org/10.1021/ef4001677)
- Gallagher, L.W., McDonald, A.G., (2013) The effect of micron sized wood fibers in wood plastic composites. *Maderas Ciencia y tecnología*. 15(3): 357-374. DOI 10.4067/S0718-221X2013005000028
- Mamiński, M.L., Król, M., McDonald, A.G., McIlroy, D.N., Niraula, I.B., Czechowska, J., Parzuchowski, P. (2013) Thermally-initiated solvent-free radical modification of beech (*Fagus sylvatica*) wood. *Journal of Wood Science & Technology*. 47(5): 1019-1031. DOI 10.1007/s00226-013-0555-6
- Coats, E.R., Searcy, E., Feris, K., Shrestha, D., McDonald, A.G., Briones, A., Magnuson, T., Prior, M. (2013) An integrated two-stage anaerobic digestion and biofuel production process to reduce life cycle GHG emissions from U.S. dairies. *Biofuels, Bioproducts & Biorefining*. 7(4):459-473. DOI: 10.1002/bbb.1408
- Chakraborty, M., McDonald, A.G., Nindo, C., Chen, S. (2013) Physicochemical characterization of an  $\alpha$ -glucan from *Chlorella sorokiniana* isolated as a co-product of biooil extracted using a unique two-step hydrothermal technology. *Algal Research*. 2(3): 230–236. <http://dx.doi.org/10.1016/j.algal.2013.04.005>
- Titiladunayo, I.F., Fapetu, O.P., and McDonald, A.G. (2013) Development of a fixed-bed pyrolysis reactor from local materials for thermochemical conversion of lignocellulosic biomass. *Journal of Biobased Materials & Bioenergy*. 7(3): 336-347.
- Wei, L., McDonald, A.G., Freitag, C., Morrell, J.J. (2013) Effects of wood fiber esterification on properties, weatherability and biodurability of wood plastic composites. *Polymer Degradation & Stability*. 98: 1348-1361. <https://doi.org/10.1016/j.polymdegradstab.2013.03.027>
- Osman, N.B., McDonald, A.G., Laborie, M-P.G. (2013) Characterization of water-soluble extracts from hot-pressed poplar. *European Journal of Wood & Wood Products*. 71(3): 343-351.
- Sahaf, A., Laborie, M-P.G., Englund, K., Garcia-Perez, M., McDonald, A.G., (2013) Rheological properties and tunable thermoplasticity of phenolic rich fraction of pyrolysis bio-oil. *Biomacromolecules*. 14(4): 1132–1139.
- Hu, S., McDonald, A.G., Coats, E.R. (2013) Characterization of polyhydroxybutyrate (PHB) biosynthesized from crude glycerol waste using mixed microbial consortia. *Journal of Applied Polymer Science*. 129: 1314-1321.
- Zhou, S., Garcia-Perez, M., Pecha, B., McDonald, A.G., Kersten, S., Westerhof, R. (2013) Secondary vapor phase reactions of lignin derived oligomers obtained by the fast pyrolysis of pine wood. *Energy & Fuels*. 27(3): 1428-1438. [dx.doi.org/10.1021/ef4001677](http://dx.doi.org/10.1021/ef4001677)
- Sardot, T., McDonald, A.G. and Smith, G. (2013) Characterization of a cardboard recycling facility's mixed plastic waste for beneficial use. *Waste & Biomass Valorization*. 4(1): 161-171.
- Fabiyyi, J.S., McDonald, A.G. (2013) Weathering performance of delignified pine-based polyvinyl-chloride composites. *Journal of Reinforced Plastics & Composites*. 32(8): 44-60.
- Schauwecker, C., McDonald, A.G., Morrell, J.J. (2013) Performance of wood treated with prospective surface protectants on outdoor exposure: FTIR spectroscopic analysis of weathered surfaces. *Holzforschung*. 67(2): 227-235. DOI 10.1515/hf-2011-0247.

- Wang, Z., McDonald, A.G., Westerhof, R.J.M., Kersten, S.R.A., Cuba-Torres, C.M., Ha, S., Pecha, B Garcia-Pereza, M. (2013) Effect of cellulose crystallinity on the formation of a liquid intermediate and on product distribution during pyrolysis. *Journal of Analytical & Applied Pyrolysis*. 100: 56-66. <http://dx.doi.org/10.1016/j.jaap.2012.11.017>.
- Zhou, S., Osman, N.B., Li, H., McDonald, A.G., Mourant, D., Li, C-Z., Garcia-Perez, M. (2013) Effect of sulfuric acid addition on the yield and composition of lignin derived oligomers obtained by the Auger and fast pyrolysis of Douglas-fir wood. *Fuel*. 103: 512-523.
- Dai, J., McDonald, A.G. (2013) Response surface optimization of hot water pretreatment for enzymatic hydrolysis of hybrid poplar – first step of bioconversion of woody biomass to value added bioplastics. In: Pretreatment techniques for biofuels and biorefineries, Editor - Zhen Fang, Springer-Verlag, Springer Asia Limited Beijing. pp 183-195, ISBN 978-3-642-32734-6.
- Osman, N.B., McDonald, A.G., Laborie, M-P.G. (2012) Analysis of DCM extractable components from hot-pressed hybrid poplar. *Holzforschung*. 66(8):927–934. DOI 10.1515/hf-2012-0011.
- Sivasankarapillai, G., McDonald, A.G., and Li, H. (2012) Lignin valorization by forming toughened lignin-co-polymers: Development of hyperbranched prepolymers for cross-linking. *Biomass & Bioenergy*. 47: 99-108.
- Sardot, T., McDonald, A.G. and Smith, G. (2012). Valorizing Mixed Plastic Waste from Cardboard Recycling by Amendment with MAPE, Wood, Cement and Ash. *Journal of Reinforced Plastics & Composites*. 31(21): 1488–1497.
- Soria, A.J. and McDonald, A.G. (2012) Liquefaction of softwoods and hardwoods in supercritical methanol: a novel approach to bio-oil production. In: “Biomass Conversion: The interface of biotechnology, chemistry and materials science”. Eds. Baskar, C., Baskar, S., and Dhillon, R.S. Springer-Verlag, Berlin. Pp 421-433. DOI: 10.1007/978-3-642-28418-2\_13.
- Titiladunayo, I.F., McDonald, A.G., and Fapetu, O.P. (2012) Effect of temperature on biochar product yield from selected lignocellulosic biomass in a pyrolysis process. *Waste & Biomass Valorization*. 3(2)311-318.
- Dziedzic, J.A. and McDonald, A.G. (2012) A comparative survey of proteins from recalcitrant tissues of a non-model gymnosperm, Douglas-fir. *Electrophoresis*. 33(7):1102-1112. DOI 10.1002/elps.201100526
- Chakraborty, M., Miao, C., McDonald, A., and Chen, S. (2012) Concomitant extraction of bio-oil and value added polysaccharides from *Chlorella sorokiniana* using a unique sequential hydrothermal extraction technology. *Fuel*. 95:63-70.
- Adefisan, O.O., Fabiyi, J.S. and McDonald, A.G. (2012) Hydration behaviour and infrared spectroscopy of pre-treatments effect on Portland cement-*Eremospatha macrocarpa* and *Laccosperma secundiflorum* systems. *Journal of Applied Science*. 12(3):254-262.
- McDonald, A.G. and Ma, L. (2012) Plastic moldable lignin. In: "Lignin: properties and applications in biotechnology and bioenergy". Ed. Paterson R.J., Nova Science Publishers, Inc. Chapter 19. pp. 489-498.
- Pillai, K.V., McDonald, A.G., and Wagner, F.G. (2011) Developing a model system in vitro to understand tracheary element development in Douglas-fir (*Pseudotsuga menziesii*). *Maderas. Ciencia y tecnología* 13(1): 3-18. DOI 10.4067/S0718-221X2011000100001
- Fabiyi, J.S., McDonald, A.G., Morrell, J.J., and Freitag, C. (2011) Structural characterization of wood species on biodegradation of wood plastic composites. *Composites part A*. 42:501–510.
- Dobroth, Z.T., Hu, S., Coats, E.R., McDonald, A.G. (2011) Polyhydroxybutyrate synthesis on biodiesel wastewater using mixed microbial consortia. *Bioresource Technology*, 102:3352–3359.
- Sivasankarapillai, G., McDonald, A.G. (2011) Synthesis and properties of lignin-highly branched poly(ester-amine) polymeric systems, *Biomass & Bioenergy*, 35:919-931.
- McDonald, A.G., and Ma, L. (2010) Plastic moldable pine fiber by benzylation. In: Wood: Types, Properties, and Uses. Ed. Botannini, L.F., Nova Science Publishers, Inc. pp181-192.
- Jain, T., Van Gerpen, J., McDonald, A.G. (2010) Production of fuel ethanol from woody biomass. *Journal of Biofuels*.1(1):109-114.
- Fabiyi, J.S., McDonald, A.G., (2010) Physical morphology and quantitative characterization of chemical changes of weathered PVC/pine composites. *Journal of Polymers in the Environment*. 18:57–64.
- Fabiyi, J.S., McDonald, A.G., (2010) Effect of wood species on property and weathering performance of wood plastic composites. *Composites Part A*. 41:1434–1440. doi:10.1016/j.compositesa.2010.06.004
- Fox, S.C., McDonald, A.G. (2010) Chemical and thermal characterization of three industrial lignins and their corresponding lignin esters. *BioResources*. 5(2):990-1009.



- Candan, Z., Hiziroglu, S., McDonald, A.G., (2010) Surface quality of thermally compressed Douglas fir veneer. *Materials & Design*. (31)7: 3574-3577.
- Johnson R.L., Liaw, S-S, Garcia-Perez, M., Ha, S., Lin, S.S-Y, McDonald, A.G., Chen, S. (2009) Pyrolysis-GC/MS studies to evaluate high temperature aqueous pretreatment as a way to enhance the quality of bio-oil from fast pyrolysis of wheat straw. *Energy & Fuels*. 23(12):6242–6252.
- Fabiya, J.S., McDonald, A.G., (2009) Pyrolysis gas chromatography-mass spectrometry study of weathered wood plastic composites. In: Handbook on Mass Spectrometry Instrumentation, Ed. J. K. Lang, Nova Science Publishers, Inc. Chp 19, pp 447-458.
- Fabiya, J.S., McDonald, A.G., McIlroy, D. (2009) Wood modification effects on weathering of HDPE-based wood plastic composites. *Journal of Polymers in the Environment*. 17:34–48.
- Wagner, F.G., Smith, N.R., McDonald A.G., (2008) Initial high-temperature schedule to reduce drying time and control kiln brown stain in ponderosa pine shop lumber. *Forest Products Journal*. 58(12):29-32.
- Soria, A.J., McDonald, A.G., Shook, S.J. (2008) Wood solubilization and depolymerization using supercritical methanol. Part 1: Process optimization and analysis of methanol insoluble components (bio-char) *Holzforschung*. 62: 402–408.
- Soria, A.J., McDonald, A.G., He, B.B. (2008) Wood solubilization and depolymerization by supercritical methanol. Part 2: Analysis of methanol soluble compounds. *Holzforschung*. 62: 409–416.
- Fabiya, J.S., McDonald, A.G., Wolcott, M.P., Griffith, P.R. (2008) Wood plastic composites weathering: Visual appearance and chemical change. *Polymer Degradation & Stability*. 93:1405-1414.
- Coats, E.R., Loge, F.J., Wolcott, M.P., Englund, K., McDonald, A.G. (2008) Production of natural fiber reinforced thermoplastic composites through the use of PHB-rich biomass. *Bioresource Technology*, 99:2680–2686.
- Fabiya J.S., McDonald A.G. (2007) Accelerated weathering of modified wood flour plastic composites. *Advanced Materials Research*. 29-30:315-318.
- Coats, E.R., Loge, F.J., Wolcott, M.P., Englund, K., McDonald, A.G. (2007) Synthesis of polyhydroxyalkanoates in municipal wastewater treatment. *Water Environment Research*, 79(12):2396-2403.
- Schauwecker, C., Morrell, J.J., McDonald, A.G., Fabiya, J.S., (2006) Degradation of a wood plastic composite exposed under tropical conditions. *Forest Products J.*, 56 (11/12):123-129.
- Sun, X., Andrew, I.G, Joblin K.N., Harris, P.J., McDonald, A.G., and Hoskin, S.O. (2006) Polysaccharide compositions of leaf cell walls of forage chicory (*Cichorium intybus* L.). *Plant Science*. 170: 18–27.
- Morrell, J.J., Stark, N.M., Pendleton, D.E., and McDonald A.G. (2006) Durability of wood-plastic composites. *Wood Design Focus*. 16(3): 7-10.
- McDonald, A.G., A. Clare and R. Meder. (2006) Characterization of water-soluble components from MDF fibers. Chapter 16, *In Characterization of Cellulosic Cell Wall*, Eds. Stokke, D. and Groom, L.. Blackwell Pub Professional. pp 213-226.
- Huber, K., McDonald, A.G.. (2006) Food carbohydrates. *In Handbook of Food Science, Technology, and Engineering*, Ed Hui, Y.H.. Francis Taylor/CRC Press. pp 1-24.
- Möller, R., McDonald, A.G., Walter, C., and Harris, P.J. (2006) Tracheid and sclereid differentiation in callus cultures of *Pinus radiata* D. Don: Toward an in-vitro system for analyzing gene function. Chapter 1, *In Characterization of Cellulosic Cell Wall*, Eds. Stokke, D. and Groom, L.. Blackwell Pub Professional. pp 3-19.
- Gallagher L.W., Sundar S.T., McDonald A.G., and Wolcott M.P. (2005) The effect of particle size and wood surface modification on wood plastic composite performance. In *refereed Proceeding of the Pre-symposium of the 13<sup>th</sup> International Symposium of Woodfiber and Pulping Chemistry*, 12-13 May, pp 11-17.
- Grigsby W., McDonald, A.G., Thumm, A., Loxton, C. (2004) X-ray photoelectron spectroscopy determination of UF resin coverage on MDF fibre. *Holz als Roh- und Werkstoff*, 62: 358-364.
- McDonald, A.G., Dare, P.H., Gifford, J.S., Steward, D., Riley, S., Simpson, I. (2004) Air emissions from timber drying: high temperature drying and re-dry of CCA treated timber. *Holz als Roh- und Werkstoff*, 62: 291-302.
- Walter, C., J. Charity, L. Donaldson, L. Grace, A.G. McDonald, R. Möller and A. Wagner. (2003) Genetic modification in conifer forestry: State of the art and future potential, a case study with *Pinus radiata*. *In Molecular Genetics and Breeding of Forest Trees*, S. Kumar and M. Fladung (Eds.), Haworth Press, Inc., New York, USA. Chapter 9, pp 215-242.

- Pickering K.L., Abdallaa, A., Jia, C., McDonald, A.G., Franich, R.A. (2003) The effect of silane coupling agents on radiata pine fibre for use in thermoplastic matrix composites. *Composites Part A*, 34: 915-926.
- Möller R., McDonald, A.G., Walter, C., Harris, P.J. (2003) Cell differentiation, secondary cell-wall formation and transformation of callus tissue of *Pinus radiata* D. Don. *Planta*, 217 (5): 736-747.
- Clare, A.B., Franich, R.A., Lomax, T.D., McDonald, A.G., Meder, A.R. (2002) Characterization and performance of cross-linkable maltodextrin-based packaging adhesives. *Journal of Adhesion Science & Technology*. 16(3): 317-329.
- McDonald, A.G., Dare, P.H., Gifford, J.S., Steward, D., Riley, S. (2002) Assessment of air emissions from industrial kiln drying of radiata pine wood. *Holz als Roh- und Werkstoff*, 60: 181-190.
- Abdalla, A., Pickering K.L., McDonald, A.G. (2002) Mechanical properties of thermoplastic matrix composites with silane-treated wood fibre. *Refereed proceedings of the 6th International Conference on Flow Processes in Composite Materials (FPCM-6)*, Auckland, New Zealand, July, pp 111-117.
- McDonald, A.G., Donaldson, L.A. (2001) Constituents of wood. *The Encyclopedia of Materials: Science and Technology*. Ed. Elsevier Science. Pp 9612-9616.
- Lee, B., McDonald, A.G., James, B. (2001) Influence of fiber length on the mechanical properties of wood-fiber/polypropylene prepreg sheets. *Materials Research Innovations* 4: 97-103.
- Suckling, I.D., Allison, R.W., Champion, S.H., McGrouther, K.G., McDonald, A.G. (2001) Cellulose degradation during conventional and modified kraft pulping. *Journal of Pulp & Paper Science*. 27(11):336-341.
- Thumm, A., McDonald, A.G., Donaldson, L.A. (2001) Visualisation of UF resin in MDF by cathodoluminescence/scanning electron microscopy. *Holz als Roh- und Werkstoff*, 59: 215-216.
- McDonald, A.G., Fernandez, M., Kreber, B., Laytner, F. (2000) The chemical nature of kiln brown stain in radiata pine. *Holzforschung*. 54 (1): 12-22.
- Kreber, B., Haslett, A.N., McDonald, A.G. (1999) Kiln brown stain in radiata pine: A short review on cause and methods for prevention. *Forest Products Journal*. 49(4): 66-70.
- McDonald, A.G., Gifford, J.S., Dare, P.H., Steward, D. (1999) Characterization of the condensate generated from vacuum-drying of radiata pine wood. *Holz als Roh- und Werkstoff*. 57: 251-258.
- McDonald, A.G., Steward, D., Franich, R.A. (1999) Monoterpene composition of radiata pine (*Pinus radiata* D. Don) sapwood from a 13 year old progeny trial. *Holz als Roh- und Werkstoff*. 57: 301-302.
- Kreber, B., McDonald, A.G., Haslett, A.N. (1999) The use of sodium dithionite for controlling kiln brown stain development in radiata pine sapwood. *Forest Products Journal*. 49(1): 57-62.
- Franich, R.A., McDonald, A.G., Steward, D. (1998) Essential oil of the wood of *Araucaria cunninghamii* Aiton ex D. Don. *Journal of Essential Oil Research*, 11: 38-40.
- McDonald, A.G., Steward, D., Clare, A.B. (1998) Characterization of volatile constituents in radiata pine HTMP screw press effluent. *Appita Journal*, 51(2): 132-137.
- Kreber, B., Fernandez, M., McDonald, A.G. (1998) Migration of kiln brown stain precursors during the drying of radiata pine sapwood. *Holzforschung*, 52: 441-446.
- Kreber, B., McDonald, A.G. (1997) Causes of kiln brown stain. *Wood Processing Newsletter* No. 21.
- Aspinall, G.O., McDonald, A.G., Pang, H., Kurjanczyk, L.A., Penner, J.L. (1994) Lipopolysaccharides from *Campylobacter jejuni* serotype 0:19; structures of core oligosaccharide regions from the serostrain and two bacterial isolates from patients with Guillain-Barré Syndrome. *Biochemistry*, 33: 241-249.
- Aspinall, G.O., McDonald, A.G., Pang, H. (1994) Lipopolysaccharides of *Campylobacter jejuni* serotype 0:19: Structures of O-antigen chains from the serostrain and two bacterial isolates from patients with the Guillain-Barré Syndrome. *Biochemistry*, 33: 250-255.
- Aspinall, G.O., McDonald, A.G., Sood, R.K. (1994) Syntheses of methyl glycosides of 6 deoxyheptoses. *Canadian Journal of Chemistry*, 72: 247-251.
- Aspinall, G.O., Fujimoto, S., McDonald, A.G., Pang, H., Kurjanczyk, L.A., Penner, J.L. (1994) Lipopolysaccharides from *Campylobacter jejuni* associated with Guillain-Barré Syndrome patients mimic human gangliosides in structure. *Infection & Immunity*, 62: 2122-2125.
- Aspinall, G.O., McDonald, A.G., Pang, H., Kurjanczyk, L.A., Penner, J.L. (1993) Lipopolysaccharide of *Campylobacter coli* serotype 0:30. Fractionation and structure of liberated core oligosaccharide. *Journal of Biological Chemistry*, 268: 6263-6368.

- Aspinall, G.O., McDonald, A.G., Raju, T.S., Pang, H., Moran, A., Penner, J.L. (1993) Chemical structures of the core regions of *Campylobacter jejuni* serotypes 0:1, 0:4, 0:23, and 0:36 lipopolysaccharides. *European Journal of Biochemistry*, 213: 1017-1027.
- Aspinall, G.O., McDonald, A.G., Raju, T.S., Pang, H., Kurjanczyk, L.A., Penner, J.L., Moran, A.P. (1993) Chemical structure of the core region of *Campylobacter jejuni* serotype 0:2 lipopolysaccharide. *European Journal of Biochemistry*, 213: 1029-1037.
- Aspinall, G.O., McDonald, A.G., Pang, H., Kurjanczyk, L.A., Penner, J.L. (1993) An antigenic polysaccharide from *Campylobacter coli* serotype 0:30. Structure of a teichoic acid-like antigenic polysaccharide associated with the lipopolysaccharide. *Journal of Biological Chemistry*, 268: 18321-18329.
- Aspinall, G.O., McDonald, A.G., Raju, T.S., Pang, H., Mills, S.D., Kurjanczyk, L.A., Penner, J.L. (1992) Serological diversity and chemical structures of *Campylobacter jejuni* low-molecular weight lipopolysaccharides. *Journal of Bacteriology*, 174: 1324-1332.
- Aspinall, G.O., McDonald, A.G., Pang, H. (1992) Structures of the O chains from lipopolysaccharides of *Campylobacter jejuni* serotypes. 0:23 and 0:36. *Carbohydrate Research*, 231: 13-30.
- McDonald, A.G., Clark, T.A. (1992) Characterization of oligosaccharides released by steam explosion of sulphur dioxide impregnated *Pinus radiata*. *Journal of Wood Chemistry & Technology*, 12: 53-78.
- Clark, T.A., Steward, D., Bruce, M.E., McDonald, A.G., Singh, A.P., Senior, D.J. (1991) Improved bleachability of radiata pine kraft pulps following treatment with hemicellulolytic enzymes. *Appita Journal*, 44: 389-404.
- Clark, T.A., McDonald, A.G., Senior, D., Mayers, P. (1990) Mannanase and xylanase treatments of softwood chemical pulps: Effects on pulp properties and bleachability. In *Biotechnology in Pulp and Paper Manufacture* (T. K. Kirk, H-M. Chang (Ed)) Butterworth-Heinemann, pp 153-167.
- Clark, T.A., Mackie, K.L., Dare, P.H., McDonald, A.G. (1989) Steam explosion of the softwood *Pinus radiata* with sulphur dioxide addition: II Process characterization. *Journal of Wood Chemistry & Technology*, 9: 135-166.
- Brasch, D.J., Fankhauser, B.L., McDonald, A.G. (1988) A study of the glucofructofuranan from the New Zealand cabbage tree *Cordyline australis*. *Carbohydrate Research*, 180: 315-324.

#### Peer Reviewed/Evaluated:

- Osman N., McDonald, A.G., and Laborie M-P. (2012) Thermal compression effects on hybrid poplar wood: Lignin analysis. In: Proc. 19<sup>th</sup> Regional Symposium of Chemical Engineering. November 7-8, Bali, Indonesia.
- Wei, L. and McDonald, A.G. (2011) Surface Characterization of Weathered WPCs Produced from Esterified Wood Flour. In: Proc. 11<sup>th</sup> International Conference on Wood & Biofiber Plastic Composites & Cellulose Nanocomposites Symposium. May 16-18, Madison, WI.
- Osman N., McDonald, A.G., and Laborie M-P. (2010) Thermal Compression of Hybrid Poplar Wood: Cellulose Analysis. In: Proc. 5<sup>th</sup> European Conference on Wood Modification, Riga, Latvia, September 20-21, pp
- McDonald, A.G. Fabiyi, J.S., Morrell, J.J., and Freitag, C. (2009) Effect of Wood Species on the Weathering and Soil Performance of Wood Plastic Composites. In: Proc. 10<sup>th</sup> International Conference on Wood & Biofiber Plastic Composites & Cellulose Nanocomposites Symposium. May 11-13, Madison, WI.
- Morrell, J.J., Stark, N.M., Pendleton, D.E., McDonald, A.G., (2009) Durability of Wood Plastic Composites. In: Proc. 10<sup>th</sup> International Conference on Wood & Biofiber Plastic Composites & Cellulose Nanocomposites Symposium. May 11-13, Madison, WI.
- Dodson C., McDonald A.G., and McIlroy D. (2009) Modification of Wood Surfaces by UV Laser Induced Photografting. In: Proc. 4<sup>th</sup> European Conference on Wood Modification, Stockholm, Sweden, April 27-29, pp277-282.
- Osman N., McDonald, A.G., and Laborie M-P. (2009) Thermal Compression of Hybrid Poplar: Analysis of extractable components after treatment. In: Proc. 4<sup>th</sup> European Conference on Wood Modification, Stockholm, Sweden, April 27-29, pp 457-460.
- McDonald, A.G, Fabiyi: J.S., Morrell, J., and Freitag, C. (2009) Effect of Wood Species on the Weathering and Soil Performance of Wood Plastic Composites. In: Proc. 10<sup>th</sup> Int. Conf. on Wood and biofiber-Plastic Composites, Madison, Wisconsin, May 11-13.

- McDonald, A.G., Mangalam, A., Blengeri-Oyarce C.D., Shook S.R. (2008) Rapid Thermal Wood Modification by Electroheating. *In: Proc. 3<sup>rd</sup> Int. Conf. on Environmentally-Compatible Forest Products*, Porto, Portugal, September 10-12<sup>th</sup>, pp 189-194.
- Ma, L., McDonald, A.G. (2007) Moldable Wood Flour by Benzylolation. *In: Proc. 3<sup>rd</sup> European Conference on Wood Modification*, Cardiff Wales, October 12-13. Pp 255-259.
- Sundar, S.T., McDonald, A.G. (2007) Wood Fibre Surface Engineering for Use in Wood Plastic Composites. *In: Proc. 3<sup>rd</sup> European Conference on Wood Modification*, Cardiff Wales, October 12-13. Pp 115-122.
- Mangalam, A., Blengeri-Oyarce C.D., McDonald, A.G., Shook S.R. (2007) Rapid Thermal Modification of Wood by Electroheating. *In: Proc. 3<sup>rd</sup> European Conference on Wood Modification*, Cardiff Wales, October 12-13. Pp 263-266.
- Keyoumu, A., McDonald, A.G., Gorman, T. (2007) Ponderosa Pine Wood Enhancement by Resin Treatment. *In: Proc. 3<sup>rd</sup> European Conference on Wood Modification*, Cardiff Wales, October 12-13. Pp 267-270.
- Fabiyi, J.S., McDonald, A.G., Stark, N.M. (2007) Surface Characterization of Weathered Wood Plastic Composites Produced from Modified Wood Flour. *In: Proc. 9<sup>th</sup> Int. Conf. on Woodfiber-Plastic Composites*, Madison, Wisconsin, May 21-23. Pp 271-276.
- Ma, L., McDonald, A.G. (2007) Plasticization of Wood Fiber by Benzylolation. *In: Proc. 9<sup>th</sup> Int. Conf. on Woodfiber-Plastic Composites*, Madison, Wisconsin, May 21-23. Pp 325-330.
- Fabiyi, J.S., McDonald, A.G. (2007) Effect of wood species on the weathering of WPC. *In Proc. 2<sup>nd</sup> World Congress & Exhibit on Woodfiber/Plastic & related Composites*. Seattle, WA, April 1-3.
- McDonald A.G., Fabiyi J.S., and Wolcott, M.P., (2006) Accelerated Weathering of Modified Wood Flour Plastic Composites. *In: Proc. of the International Conference of Advanced Materials Processing*. December 11-13, Hamilton, New Zealand.
- Fabiyi, J.S., McDonald, A.G., M.P. Wolcott and K. Englund (2006) Understanding the Chemistry of Wood Plastic Composites Weathering. *In: Proc. Progress in Woodfibre-Plastic Composites Conference 2006*, Toronto, Canada, May 1-2.
- Fox, S.C. and McDonald, A.G. (2005) The esterification of different industrial lignins to form lignin bioplastics. *In: Proc. (CD-ROM) of the 37<sup>th</sup> SAMPE Fall Technical Conference*, Seattle, WA, October 31-November 2.
- McDonald, A.G., L.W. Gallagher, S.T. Sundar and M.P. Wolcott (2005) The Effect of Woodfiber Modification and Particle Size on Wood-Plastic Composite Performance. *In: Proc. 8<sup>th</sup> Int. Conf. on Woodfiber-Plastic Composites*, Madison, Wisconsin, May 23-25, pp163-172.
- Fabiyi, J.S., McDonald, A.G., and M.P. Wolcott (2005) Chemical Changes that Occur During the Weathering of Wood-Plastic Composites. *In: Proc. 8<sup>th</sup> Int. Conf. on Woodfiber-Plastic Composites*, Madison, Wisconsin, May 23-25, pp191-196.
- Soria, J.A., A.G. McDonald, S. Shook, and B. He (2005) Supercritical methanol for conversion of Ponderosa pine into chemicals and fuels. *In: Proc. of the 13<sup>th</sup> Int. Symp. on Wood, Fibre and Pulping Chemistry*, Auckland, New Zealand, May 16-19, Vol 3, pp369-374.
- Coats, E.R., Loge, F.J., Englund, K., Wolcott, M.P. and McDonald, A.G. (2005) Sustainable, environmentally benign thermoplastics through coupled wastewater treatment. *In: Proc. Engineering Sustainability Conference*, 2005, Pittsburgh, Pennsylvania, April 12.
- Gallagher, L.W., A.G., McDonald, and M.P. Wolcott (2005) Engineered Woodfiber Plastic Composites. *In: Proc. 39<sup>th</sup> Wood Composites Symposium*, April 4-7, Pullman, WA, pp346-347.
- Smith, S.T., A.G., McDonald, and M.P. Wolcott (2005) Wood Fiber Surface Engineering for Use in Wood Plastic Composites. *In: Proc. 39<sup>th</sup> Wood Composites Symposium*, April 4-7, Pullman, WA, pp343.
- Fabiyi, J.S., A.G., McDonald, and M.P. Wolcott (2005) Effect of Weathering on the Surface Chemical Properties of Wood Plastic Composites. *In: Proc. 39<sup>th</sup> Wood Composites Symposium*, April 4-7, Pullman, WA, pp347-348.
- McDonald, A.G., L.W. Gallagher, S.T. Sundar and M.P. Wolcott (2004) The Effect of Particle Size on Wood Plastic Composite Performance. *In: Proc. (CD-ROM) 32<sup>nd</sup> Annual Conference of the North American Thermal Analysis Society*, Williamsburg, VA, October 4-6.
- Gallagher, L., A.G. McDonald, and M.P. Wolcott. (2004) Micro-woodfiber composites. *In: Proc. Progress in Woodfibre-Plastic Composites Conference 2004*, Toronto, Canada, May 10-11. pp 464-465.

- Sundar, S.T., A.G. McDonald, and M.P. Wolcott. (2004) Interphase enhancement and evaluation of tensile properties of WPC. *In: Proc. Progress in Woodfibre-Plastic Composites Conference 2004*, Toronto, Canada, May 10-11. pp 466-467.
- Sundar, S.T., A.G. McDonald and M. Wolcott. (2004) Hydrophobic wood core-shell development to improve WPC. *In: Proc. 38<sup>th</sup> Wood Composites Symposium*, April 5-8, Pullman, WA pp 255.
- Gallagher, L.W., A.G. McDonald and M. Wolcott. (2004) Micro-woodfiber composites. *In: Proc. 38<sup>th</sup> Wood Composites Symposium*, April 5-8, Pullman, WA pp 260-261.
- McDonald, A.G., A. Clare and R. Meder. (2003) Chemical characterization of the water soluble components from radiata pine MDF Fiber. *In: Proc. 12<sup>th</sup> International Symposium of Wood and Pulping Chemistry*, June 9-12, 2003, Madison, WI. Volume II, pp 173-176.
- Steward, D., A.G. McDonald and A.R. Meder. (2002) Thermoplastic lignin esters. *In: Proc. 6<sup>th</sup> Pacific Rim Biobased Composites Symposium*, Portland, OR (November 10-13) pp 584-594.
- Risch, C. and A.G. McDonald. (2002) Fiber-plastic composites made from wet-formed wood and plastic fiber mats. *In: Proc. 6<sup>th</sup> Pacific Rim Biobased Composites Symposium*, Portland, OR (November 10-13) pp 122-128.
- Weal, S., A.G. McDonald and K. Pickering. (2002) Totally wood based fiber-plastic composite materials. *In: Proc. Progress in Woodfibre-Plastic composites Conference*, Toronto, Canada (May 23-24).
- Abdalla, A., K.L. Pickering and A.G. McDonald (2002) Mechanical properties of thermoplastic matrix composites with silane-treated wood fibre. *In: Proc. 6<sup>th</sup> Int. Conference on Flow Processes in Composite Materials (FPCM-6)*, Auckland, New Zealand, July, pp 111-117.
- Pickering, K.L., A. Abdalla, and A.G. McDonald. (2002) Modification of radiata pine fibre for use in thermoplastic matrix composites using silane coupling agents. *In: Proc. Progress in Wood Fibre-Plastic Conference*, Toronto, Canada (May 23-24).
- McDonald, A.G. and K. Jolly. (2001) Wood Fibre-Plastic Composites: Recent developments, research and commercial applications in Australia. *In: Proc. 2001 FIEA Annual Conference: Non-wood Substitutes, Growing Competition to Solid Wood Products*, Nelson, NA (May 31) pp 1-9.
- Lee, B.J., and A.G. McDonald (2000). Wood fibre-plastic composite materials for injection moulding. *In: Proc. 5<sup>th</sup> Pacific Rim Biobased Composites Symposium*, December 10-13, Canberra, Australia, pp 664-670.
- Möeller, R.A.H., P.J. Harris, A.G. McDonald, and C. Walter (2000) In vitro cell differentiation in pinus radiata D. Don. Poster presentation for Gordon Conference on Plant Cell Walls in Meriden, New Hampshire, August 2000.
- Singh, A.P., and A.G. McDonald. (2000) Comparison of radiata pine and rubberwood high temperature TMP fibres by microscopy. *In: New Horizons in Wood Anatomy*. Ed by YS Kim, Chonnan National University Press, Kurangju, South Korea, pp 334-339.
- McDonald, A.G., and A.B. Clare (2000). Chemical characterization of constituents from radiata pine presteamer screw press effluent in an MDF operation. *In: Proc. 5<sup>th</sup> Pacific Rim Biobased Composites Symposium*, December 10-13, Canberra, Australia, pp 326-334.
- Lee, B.J., and A.G. McDonald (2000). Wood fibre-plastic composites as packaging materials. *In: Proc. 1<sup>st</sup> International Conference of Advanced Materials Processing*, Edited by D.L. Zhang, K.L. Pickering, X.Y. Xiong. Rotorua, New Zealand, November 19-23, pp 187-191.
- McDonald, A.G., A.B. Clare, and B. Dawson. Surface characterization of radiata pine high-temperature TMP fibres by x-ray photo-electron spectroscopy. *In: Proc. 53<sup>rd</sup> General APPITA Conference*. Rotorua, New Zealand. (19-22 April 1999) Vol. 1, pp 51-57.
- McDonald, A.G., A.B. Clare, and A.R. Meder. (1999) Chemical characterization of the neutral water soluble components from radiata pine high temperature TMP fibre. *In: Proc. 53<sup>rd</sup> General APPITA Conference*. Rotorua, New Zealand. (19-22 April) Vol. 2, pp 641-647.
- Suckling, I.D., R.W. Allison, S.H. Champion, K.G. McGrouther, and A.G. McDonald. (1999) Cellulose degradation during conventional and modified kraft pulping. *In: Proc. 53<sup>rd</sup> General APPITA Conference*. Rotorua, New Zealand. (19-22 April) Vol. 1, pp 111-117.
- Alexander, J.P., A.G. McDonald, and J. Hague. (1999) Medium density fiberboard from novel fiber types. *In: Proc. 3<sup>rd</sup> European Panel Products Symposium*, Llandudno, Wales, October 6-8, pp 43-53.
- McDonald, A.G., K. Murton, J. McFarlane, and A. Clare (1998) Characterization and performance of chemically modified radiata pine HTMP fibres for MDF. *In Proc. 4<sup>th</sup> Pacific Rim Bio-Based Composites Symposium*, November 2-5, 1998. Bogor, Indonesia pp 237-246.

- McDonald, A.G., L.A. Donaldson, A.P. Singh, J. Alexander and K.D. Murton. (1997) Characterization of radiata pine HTMP fibres by electron, UV, and confocal laser scanning microscopy. *In Proc. of the 1<sup>st</sup> European Panel Products Symposium, Llandudno, Wales, October 9-10*, pp 41-51.
- Franich, R.A., J. Gifford, A. McDonald, M. Robinson, D. Steward, and T. Stuthridge. (1997) Essential oil and extractives of the wood of *araucaria cunninghamii* Aiton ex D. Don. *In: Proc. Int. Conference on Plant oils and Marine lipids, Auckland (November 25-28)* pp 141-142.
- Smith, D.R., L.A. Donaldson, and A.G. McDonald. (1997) Current research and future applications for cultured pine tracheary elements. *In: Proc. IUFRO 97 Genetics of Radiata Pine Conference, Rotorua (December 1-4)* pp 285-288.
- McDonald, A.G., D. Steward, and A.B. Clare. (1997) Characterization of volatile constituents in radiata pine HTMP screw press effluent. *In: Proc. 51<sup>st</sup> APPITA Annual General Conference (April 28-May 1). Melbourne, Australia. Vol. 2*, pp 667-674.
- Kreber, B., and A.G. McDonald. (1997) An evaluation of chemical pre-treatments for controlling kiln brown stain in radiata pine. *In: Proc. 28<sup>th</sup> Annual Meeting of the International Research Group on Wood Preservation, Whistler, Canada (May 24-30), IRG/WP 97-30124*.
- McDonald, A.G., M. Fernandez, and B. Kreber. (1997) Chemical and UV-VIS spectroscopic study on kiln brown stain formation in radiata pine. *In: Proc. 9<sup>th</sup> International Symposium of Wood and Pulping Chemistry. Montreal, Canada. (June 9-12)*, pp 70-71.
- McDonald, A.G., T.R. Stuthridge, A.B. Clare, and M.J. Robinson. (1997) Isolation and analysis of extractives from radiata pine HTMP fibre. *In: Proc. 9<sup>th</sup> International Symposium of Wood and Pulping Chemistry. Montreal, Canada. (June 9-12)*, pp 71-76.
- McDonald, A.G., and A.B. Clare. (1996) The determination of fibre charge and acidic group content of *Pinus radiata* MDF fibre. *In: Proc. 50<sup>th</sup> APPITA Annual General Conference (May 5-10). Auckland, New Zealand. Vol. 2*, pp 641-646.
- McDonald, A.G., and A. Singh. (1996) Chemical and ultrastructural characterization of radiata pine MDF fibres. *In: Proc. 3<sup>rd</sup> Pacific Rim Bio-Based Composites Symposium, December 2-5. Kyoto, Japan*, pp 175-183.
- McDonald, A.G., and S. Wastney. (1995) Analysis of volatile emissions from kiln drying of radiata pine. *In: Proc. 8<sup>th</sup> Int. Symposium of Wood and Pulping Chemistry. Helsinki, Finland. Vol. III*, pp 431-436.

#### Refereed/Adjudicated (currently scheduled or submitted):

- Mengistie, E., Bokros, N., DeBolt, S. McDonald, A.G. (2023) Biomechanical and viscoelastic Properties of sorghum stalk and its correlation with composition. *Cellulose. Accepted 1-11-2023*.
- Albor, G., Mirkouei, A., McDonald, A.G., Struhs, E., Sotoudehnia, F. (2023) Fixed bed (batch) slow pyrolysis process for polystyrene waste recycling. *MDPI: Processes. Accepted 03-30-2023*.
- Mengistie, E., McDonald, A.G. (2022) Effect of Cell Wall Compositions on Lodging Resistance of Cereal Crops: Review. *The Journal of Agricultural Science. Submitted*.
- Balogun, A. O., Adeleke, A. A., Ikubanni, P. P., Adegoke, S.O., Alayat, A.M., McDonald, A.G. (2022) Non-isothermal thermogravimetry of *Moringa oleifera* husk and *Delonix regia* pod under oxidative regime – kinetic, combustion characteristic and thermodynamic analyses. *Alexandria Engineering Journal. Submitted*.
- Khan, M.S, Kassem, E., Aston, D. E., Sirin, O., McDonald, A.G. (2022) Microstructural phase characterization of asphalt binder modified with antioxidant additives and copolymers. *International Journal of Pavement Research and Technology. Submitted*.
- Peresin, M.S., Naghizadeh, Z., Iglesias, M.C., McDonald, A.G., Via, B.K., Maughan, M.R. (2022) Nanocellulose-Phenol Formaldehyde Adhesive System for Engineered Wood Products: Review. *International Journal of Adhesion and Adhesives. Submitted*.
- Reiniati, I., McDonald, A.G., Laborie, M-P. (2022) The impact of hotpressing on the in-situ softening of ethylene glycol - plasticized wood. *Wood and Fiber Science. Revised manuscript submitted*.
- Pires, A.P.P., Garcia-Perez, M., Olarte M.V., Kew, W., Schimdt, A., Zemaitis, K., Terrel, E., McDonadl, A., Han, Y. (2022) Comparison of the Chemical Composition of Liquids from the Pyrolysis and Hydrothermal Liquefaction of Lignocellulosic Materials. *Energy and Fuels. Submitted*.
- Alorbu, C., Carey, J., McDonald, A.G., Cai, L. (2023) Antifungal properties of lauric arginate (LAE) treated wood. *Holzforschung. Submitted*.



Carne, R.H.R., Alade, A.A., McDonald, A.G., Maughan, M.R. (2023) A screw extrusion-based system for additive manufacturing of wood – sodium silicate thermoset composites. *Virtual and Physical Prototyping*. *In preparation*.

Olabisi, A.S., Ajisegiri, E.S., Balogun, A.O., Fakinle, B.S., Sotoudehnia, F., McDonald, A.G., Ikubanni, P.P. (2023) Physicochemical characterization of woody lignocellulosic biomass and charcoal for bio-energy heat generation. *Bioresources*. *In preparation*.

#### Post-Doctoral Scholars:

Dr. Noridah Osman, 2011-2012;  
 Dr. Gopa Sivasankarapillai, 2008-2010;  
 Dr. Hui Li, 2014;  
 Dr. Shaobo Liang, 2015;  
 Dr. Abdulbaset Alayat, 2018-  
 Dr. Farid Sotoudehnia, 2021-2022

#### Visiting Scholars Hosted:

Zeki Candan (2009), Istanbul University, Turkey  
 Dr. Femi Adefisan (2010, 2015), University of Ibadan, Nigeria  
 Dr. Issac Titiladunayo (2011), Federal University of Technology, Nigeria  
 Helena Pohjanletho (2011), Technical Research Centre of Finland, Finland  
 Dr. Xiaolin Zhang (2013), Xia'an University of Technology, China  
 Mercy Ogunleye (2013), Federal College of Forestry, Nigeria  
 Ayokunle Balogun (2013), University of Ilorin, Nigeria  
 Esther Faboro (2014), Bowen University, Nigeria  
 Dr. Ma Xiaojun (2014), Tianjin University of Science & Technology, China  
 Dr. Mariusz Maminski (2014, Fulbright), Warsaw University of Life Sciences Poland  
 Andres Breton Toral (2015), National Polytechnic Institute, Mexico  
 Shupin Luo (2015-2016), Beijing Forestry University, China  
 Dr. Christianah Elusian (2017), Obafemi Awolowo University, Nigeria  
 Dr. Julius Adesanwo (2017), Obafemi Awolowo University, Nigeria  
 Xiaogian Wang (2017-2019), Beijing Forestry University, China  
 Abdulkarim Rabiou (2018-2019, Fulbright), University of Ilorin, Nigeria  
 Claudiney Cordeiro (2019-2020), Federal University of Paraná, Brazil

#### Grants and Contracts Awarded:

Wood, D., Mead, M., McDonald, A.G., Cai, L. Testing new manufacturing methods of natural fiber insulation batts - Supplemental. Idaho Department of Commerce – IGEM. 06/2022 - 09/2023. \$106,175.  
 McDonald, A.G. Characterization of Solvent Extracted Plastics from Municipal Solid Wastes and Alloying to Form Composite Materials. 07/2022-12/2024. \$200,000. INL contract # 03615636.  
 McDonald, A.G. Toward production of lignin-based bioplastics and biocomposites. Sun Grant Program Western Region, 07/2022-06/2024. \$136,306. Subaward # U1522C-G  
 Maughan, M., Via, B., Cai, L., Ibrahim, A., Manrique, C. RII Track 2 FEC: Developing a Circular Biobased Framework for Architecture, Engineering and Construction Through Additive Manufacturing. NSF. 10/2021-09/2025, \$3,974,309. Award # 2119809  
 Wood, D., Mead, M., McDonald, A.G., Cai, L. Testing new manufacturing methods of natural fiber insulation batts. Idaho Department of Commerce – IGEM. 06/2021 - 09/2022. \$206,624. Award # 004674.  
 Cai, L., McDonald, A.G. Hybridizing Wood and Zinc Oxide-Eugenol Cement towards High-performance Building Materials. USDA-NIFA. 01/2021-12/2023. \$329,888. Award # 2021-67022-34834.  
 Coleman, M., McDonald, A.G. Saurer, J. Maximizing Western Forest productivity potential with municipal effluent. USDA-NIFA. 05/2020-04/2024. \$499,957. Award # 2020-67020-31174.  
 Baker, K., McDonald, A.G., Maughan, M., Xing, T., Woods, D. Cellulosic 3D Printing of Modular Building Assemblies. Idaho State Board of Education IGEM. 08/2019-07/2022. \$895,900. Award # IGEM 20-002.

- Bar-Ziv, E., McDonald, A.G. NSF PFI-Research Partnerships: Proof-of-Concept and a Prototype of an Integrated Torrefaction-Extrusion Unit for Organic Wastes Streams. NSF. 08/2018-07/2021. \$750,000. Award # 1827364.
- Humes, K., Coats, E.R., McDonald, A.G., Ryu, J., Feris, K., Delparte, D. Sustaining the Competitiveness of the Food Industry in Southern Idaho: Integrated Water, Energy, and Waste Management. Idaho State Board of Education IGEM. 07/2018-06/2021. \$2,100,000. Award # IGEM19-001.
- Debolt, S., Robertson, D., McDonald, A.G., Sekhon, R.S. NSF-Track-II: A multiscale, multiphysics-modeling framework for genome-to-phenome mapping via intermediate phenotypes. NSF. 08/2018-07/2022. \$6,000,000. Award # 1826715
- Vasdekis, A.E., McDonald, A.G., Baker, S. US-DOE. Multi-Modal Imager of Metabolome and Enzyme Dynamics for Co-Optimizing Yields and Titters in Biofuel Producing Microorganisms. 08/2018-07/2021. \$1,500,000. Award # DE-SC0019249.
- McDonald, A.G. Toward commercial production of lactic acid and anti-microbial agents from food waste. Western SunGrant. 07/2018-08/2019, \$149,801. Award # U0994G-D.
- McDonald, A.G., Coats, E.R. Cook, S. Acquisition of a GC-MS for Bioproducts Research. Office of Research and Economic Development – Equipment and Infrastructure Support Award. 04/2018-12/2018. \$22,560.
- Coats, E.R., McDonald, A.G., Feris, K. Engineering an integrated suite of processes to maximize bio-recovery of carbon and nutrients from dairy manure. USDA-NIFA. 05/2018-4/2021. \$333,000. Award # 2018-67022-27894
- McDonald, A.G., Dual Detector Platform replacement. SBOE-UI. 01/2016-06/2016, \$45,000.
- McIlroy, D., McDonald, A.G., Cheng, I.F. Advanced high surface area electrodes for electrochemical applications and energy production. Murdock Charitable Trust. 01/2016-6/2017, \$110,680.
- Williams, R., Hrdlicka, P.J., Magolan, J., Shreeve, J.M., Baker, L.L., Strawn, D., Cheng, I.F., McDonald, A.G., Roll, M.F. Acquisition of a 500 MHz Nuclear Magnetic Resonance Spectrometer. M.J. Murdock Charitable Trust. 01/2015-12/2016, \$395,690.
- McDonald, A.G. Coleman, M., Brooks, R. Washington DNR Pyrolysis Project. Washington State DNR, 4/14-12/14, \$18,261.
- McDonald, A.G. and McIlroy, D. Upgrading biomass pyrolysis bio-oil to renewable fuels. NIATT-DOT-TransLIVE, 9/13-8/14, \$55,000.
- McDonald, A.G. Waters Academic Grant program, 10/12-6/13. \$12,000.
- Searcy, E., Coats, E., Feris, K., McDonald, A.G., Newby, D. Integrated Approach to Algal Biofuel, Bio-power, and Agricultural Waste Management. INL-LDRD, 10/12-9/15, \$600,000.
- McDonald, A.G. and McIlroy, D. Pyrolysis bio-oil upgrading to renewable fuels. NIATT-DOT, 9/12-8/13, \$82,000.
- Feris, K., Coats, E., McDonald, A.G., Guillen, D.P., Hamilton, M. Enhancing greenhouse gas mitigation & economic viability of manure management systems via production of value-added carbon sequestering bio-products and soil amendments. USDA-NIFA. 9/12-8/15, \$650,000.
- Huber, K., McDonald, A.G., Kim, J-Y. Contrast of Russet Burbank and Premier Russet Potato Tissue and Starch Characteristics. J.R. Simplot Company. Jan 2012-Dec 2012, \$24,732.
- Sablani, S., Bohlscheid, J., Nindo, C., Huber, K., and McDonald, A.G., Vapor Sorption Analyzer Equipment Grant - Decagon Devices, Pullman, WA.
- McDonald, A.G. and McIlroy, D. Development of nanocatalysts for the synthesis of biofuels from biomass derived syngas. NIATT-DOT, 9/11-8/12, \$104,603.
- Coats, E. and McDonald, A.G., Constructing a Pilot-scale Bioplastic Production Facility. Idaho SBOE. March 2011 – Dec 2011, \$50,000.
- McDonald, A.G., Coats, E., Huber, K. Converting Potato Peel Waste to Bioproducts. J.R. Simplot Company. Jan 2011-Dec 2012, \$150,725.
- Searcy, E., Briones, A., Coats, E., Feris, K., Keiser, D., Magnuson, T., McDonald, A., Shrestha, D. Design and Operational Improvements, and LCA in Anaerobic Digestion of Fermented Dairy Manure Using a 2-Stage process. INL-LDRD, April 2010-Dec 2012, \$592,000.
- Gorman T.M., McDonald A.G., Bender, D., and Morgan, T. Inland Northwest Forest Products Consortium USDA-CSREES, July 2010-June 2013, \$504,000.
- Garcia-Perez M., McDonald A.G and Elliott D. Understanding Cellulose Primary Thermo-chemical Reactions to Enhance the Yields of Anhydro-saccharides Resulting from Fast Pyrolysis. NSF, Jan 2010-Dec 2012, \$298,863.
- Coats, E. and McDonald, A.G., Toward Commodity Biopolymer Production from Dairy Manure. Idaho Dairyman's Assoc. Jan 2010 – Dec 2011, \$102,300.

- McDonald A.G. and Soria A.J. Bio-oils from high lignin feedstocks Inland Northwest Forest Products Consortium USDA-CSREES, July 2009-June 2011, \$36,310.
- McDonald A.G. and Morrell, J. Durable Wood plastic composites. Inland Northwest Forest Products Consortium USDA-CSREES, July 2009-June 2011, \$54,200.
- Wagner F. and McDonald A.G. Energy Consumption at Commercial Dry Kilns. Inland Northwest Forest Products Consortium USDA-CSREES, July 2009-June 2011, \$47,409.
- Gorman T.M. and A.G. McDonald. Sustainable building materials from at-risk intermountain species. USDA-Forest Products Laboratory, June 2009-May 2014, \$100,000.
- Coats, E., McDonald, A.G., Makus, L. An Interdisciplinary Research Program Advancing Commercial Processes for Converting Organic Waste to Chemical Commodities, UI-FIT, Jun 2009-July 2010, \$10,000.
- McDonald A.G. and Laborie M-P. The Chemistry of Hot Pressing. Inland Northwest Forest Products Consortium USDA-CSREES, July 2008-June 2010, \$44,200.
- McDonald A.G. and Soria A.J. Biofuels Development and Evaluation. Inland Northwest Forest Products Consortium USDA-CSREES, July 2008-June 2010, \$37,800.
- Wagner F. and McDonald A.G. A Lumber Quality and Kiln-Time Implications of High-Temperature Kiln Schedules and Restraint on Inland Northwest Species. Inland Northwest Forest Products Consortium USDA-CSREES, July 2008-June 2010, \$44,000.
- Coats E and McDonald A.G. Development of a Bio-based Industry Utilizing Municipally-derived Organic Waste: Production of Biological Thermoplastics. Idaho SBOE-HERC, Jan 2008-July 2009, \$75,000.
- Gorman T.M. and A.G. McDonald. Chemical, physical and mechanical properties of at-risk intermountain species. USDA-Forest Products Laboratory, Aug 2008-Aug 2013, \$50,000.
- Gorman T.M. and A.G. McDonald. Assessing wood quality characteristics of the Intermountain Forest Resource. USDA-Forest Products Laboratory, Aug 2007-Aug 2012, \$130,000.
- McDonald A.G., Wagner F. and Paszczynski A. A Proteomic Study of Wood Formation in Douglas-fir using an In-vitro Model System. Stillinger Forestry Research Grant, July 2007-June 2008, \$24,000.
- Aston, D.E, McDonald, A.G, McIlroy, D, Griffiths, P, and Laborie, M-P. MRI: Acquisition of Confocal Raman, Scanning Near-Field Optical Microscopy (SNOM) System for Wet and Dry Materials and Device Engineering. NSF-MRI, Sept 2006-Aug 2007, \$527,000.
- Coats E and McDonald A.G. Development of a Bio-based Industry Utilizing Organic Waste Streams (Confined Animal Feedlot and Biodiesel co-Products): Production of Biological Thermoplastics and Natural Fiber-Plastic Composites (NFPCs). Sun Grant Initiative, July 2007-June 2009, \$254,916.
- Gorman T.M. Shook, S, Nalle, D and A.G. McDonald. Log merchandising and wood quality enhancements. Inland Northwest Forest Products Consortium USDA-CSREES, July 2006-June 2008, \$381,672.
- Gorman T.M. and A.G. McDonald. Property evaluation of the at-risk timber resource of the intermountain west. USDA-Forest Products Laboratory, July2006-June2010, \$91,000.
- McDonald A.G. and McIlroy, D. Surface modification of wood by UV Laser excitation. Inland Northwest Forest Products Consortium USDA-CSREES, July 2006-June 2008, \$77,697.
- He, B. Huber, K, Yukslell, G, Chen, S, and McDonald A.G. Curriculum development: biorefinery process analysis and design. USDA-CSREES, Oct 2004-Sept 2007, \$284,009.
- McDonald A.G. and Gorman T.M. Hardening and dimensionally stabilizing wood. Inland Northwest Forest Products Consortium USDA-CSREES, July 2005-June 2007, \$27,540.
- McDonald A.G.. Plasticization of Wood. Inland Northwest Forest Products Consortium USDA-CSREES, July 2005-June 2007, \$82,080.
- Paszczynski, A.P., et al., Proteomics Research Discovery Core Facility, Murdock Charitable Trust Equipment Grant, February 2005, \$419,000.
- McDonald A.G. et al., Extrusion Capabilities for Materials & Food Research in the Inland Northwest Murdock Charitable Trust Equipment Grant, February 2005, \$235,500.
- McDonald A.G. and K. Launchbaugh. Carbohydrate Analysis for Bioproducts Research. USDA-CREES-NRI program:, equipment grant # 2005-35504-16083, 2005, \$24,750.
- McDonald, A.G. and B. He. FTIR Spectroscopy for Wood and Bioproducts Research. USDA-CSREES-NRI equipment grant #2004-03713 August 2004, \$24,006.
- Laborie, M-P and A.G. McDonald. Physico-chemical aspects of hybrid poplar hot-pressing. USDA-CSREES-NRI grant #2004-3565, August 2004, \$204,801.

- McDonald, A.G., and M.P. Laborie. Thermoplastics derived from lignin. Inland Northwest Forest Products Consortium USDA-CSREES, July 2004-June 2006, \$64,720.
- McDonald, A.G. and E. Aston. EPSCOR Instrument Grant, University of Idaho, Research Office, February 2004, \$10,000.
- McDonald, A.G., F. Wagner, D. Winney, C. Anderson. Understanding Xylem Development in Conifers by In-vitro Studies. USDA-McIntire-Stennis, \$62,360, March 2004-March 2006.
- McDonald, A.G. and M.P. Wolcott. Improved formulations and/or product design for weatherability and prototype siding and trim components. Office of Naval Research Grant # N00014-03-1-0949, September 2003-05, \$111,472.
- McDonald, A.G., T. Gorman, and D. Bender. Rapidly Screening the Forest Resource for Wood Quality. Inland Northwest Forest Products Consortium USDA-CSREES, September 2003-05, \$71,589.
- Laborie M-P, and A.G. McDonald. "Pyrolysis-based Novolacs for Wood-Based Composites" USDA-CREES, Inland Northwest Forest Products Consortium, September 2003-05, \$49,891.
- McDonald, A.G., K. Huber, and P. Singh. Equipment Funds for Small Laboratory Molder. EPSCOR equipment grant, University of Idaho, Research office, August 2003, \$5,500.
- McDonald A.G., and K. Cain. Structural and Functional Characterization of an Immunoprotective Lipopolysaccharide (LPS) Component of the Fish Pathogen *Flavobacterium psychrophilum*. Seed Grant, EPSCOR-University of Idaho, April 2003, \$9,000.
- McDonald, A.G. Small Travel Grant, Research Office, University of Idaho, April 2003, \$900
- Huber, K., A.G. McDonald and P. Singh. Simultaneous microstructural and calorimetric characterization of foods and biomaterials using thermal microscopy. USDA-CREES-NRI equipment grant program (2003-35503-13697), October 2002, \$25,000.
- McDonald, A.G. Micro-woodfiber composites. USDA-CREES-NRI program: Improved Utilization of Wood and Woodfiber, 73.0, December 2002-November 2004, \$170,000.
- Huber, K., A.G. McDonald, and R. vonWandruska. EPSCOR instrument grant, University of Idaho, Research office, August 2002, \$15,500.
- McDonald, A.G., T.M. Gorman, and M.P. Wolcott. Property enhancements of wood and wood based products from small diameter logs by an electro-heating treatment. Inland Northwest Forest Products Consortium USDA-CSREES, July 2002-June 2003, \$64,519.
- McDonald, A.G. Small Travel Grant, Research Office, University of Idaho, April 2002, \$900.
- McDonald, A.G. EPSCOR equipment grant, University of Idaho, Research office, January 2002, \$30,000.

#### Grants and Contracts Pending:

- Sekhon, R.S., McMahan, C., Robertson, D., McDonald, A.G., Debot, S. BII - BRIDGES: Biological Research to Integrate Domains of Genomics and Engineering Sciences. NSF. 08/2023-07/2029, \$15,000,000.
- Ibrahim, A., McDonald, A.G. Alkali-Silica Reaction (ASR) Mitigation Strategies with Specific Admixtures. Idaho Department of Transportation, 07/2023-06/2025, \$150,000.
- McDonald, A.G., Maughan, M., Shovic, J. Additive Manufacturing of Wood-Thermoset Composites USDA-NIFA, 07/2023-06-2026. \$649,981
- McDonald, A.G. and Maughan, M. Wood-composite structures by additive manufacturing. DOD. \$300,000.
- Ibrahim, A., McDonald, A.G. Pioneering Solution for Improving Cementitious Materials Performance and Applications with Nanocellulose fibers from Wood and Agricultural Residues. Idaho State Board of Education IGEM. 07/2022-06/2025. \$900,000.
- Zhao, H., McDonald, A.G., Chen, D. DOE EPSCoR: Investigation on the effect of supports for CO2 absorption and conversion to methanol using operando spectroscopy approaches. Department of Energy. 01/2023-12/2025. \$749,999.

#### Honors and Awards:

- NZ-FRI Achievement in Science Award for Inter-Disciplinary Science, April 1997
- Carter Holt Harvey-New Ventures Ideas to Business Entrepreneur Awards 2001: Oct 2001.
- Society of Wood Science and Technology – Award for Distinguished Service to the Profession of Wood Science and technology July 2022
- College of Natural Resources – Outstanding faculty award, March 2023.

**SERVICE:****Major Committee Assignments:**

Serving as committee member for CNR Curriculum committee, 2013-present  
Serving as committee member for the CNR committee of committees, 2022-present  
Serving as committee member for the CNR Safety committee, 2005-present  
Served on P&T committee for the College of Natural Resources, UI, 2022.  
Served on P&T committee for the Department of Mechanical Engineering UI, 2022.  
Served on the search committee for Director, Center for Ecohydraulics Research, UI 2021.  
Served on P&T committee for the Department of Forest Rangeland and Fire Sciences, UI, 2021.  
Served on the search committee for the Department Chair in Mechanical Engineering, UI 2020.  
Served on P&T committee for the Department of Forest Rangeland and Fire Sciences, UI, 2020.  
Served on P&T committee for the College of Natural Resources, UI, 2020.  
Served on P&T committee for the College of Natural Resources, UI, 2021.  
Served as chair for P&T committee for the College of Natural Resources, UI, 2022.  
Served on P&T committee for the Department of Forest Rangeland and Fire Sciences, UI, 2019.  
Served on the search committee for the Assistant/Associate Professor position in Renewable Materials Program, UI 2018-2019  
Served on P&T committee for the Department of Forest Rangeland and Fire Sciences, UI, 2018.  
Served on P&T committee for the Department of Forest Rangeland and Fire Sciences, UI, 2017.  
Served on the search committee for the Assistant Professor position in Conservation Social Science Department, UI 2014-2015  
Served on the search committee for Associate Contract Review Officer, UI, 2013  
Served on the search committee for the Polymer Scientist position in the Material Science and Chemical Engineering Department, UI, 2011  
Served on the search committee for the Polymer Scientist position in the Material Science and Engineering Department, UI, 2007  
Served on the search committee for the Polymer Scientist position in the Material Science and Engineering Department, UI, 2003  
Served on the two search committees for the Biomaterials position in the Wood Materials and engineering Laboratory, WSU, 2002, 2003  
Served as chair for the CNR committee of committees, 2002-04  
Served as committee member for the UI Safety and Loss committee, 2003-2009  
Served as committee member for the CNR Space committee, 2008-2018  
Served as committee member for the CNR Graduate student scholarship committee, 2009-2015  
Served as committee member for CNR Promotion and tenure committee, 2013-2016

**Professional and Scholarly Organizations:**

Australian Pulp and Paper Institute Technical Association (APPITA), member, 1993-2010.  
Forest Products Society, Member, 2002-present  
Society of Wood Science and Technology, Member, 2002-present  
American Chemical Society, Member, 2010-present  
International Association of Wood Scientists (IAWS), Elected Fellow, 2013-present