

## New Zealand RS&T Curriculum Vitae

### PART 1

1a. Personal details			
Full name	Dr	Warren	James Grigsby
Present position	Research Leader – Chemical Synthesis and Design		
Organisation/Employer	New Zealand Forest Research Institute Ltd (Scion)		
Contact Address	Te Papa Tipu Innovation Park,		
	49 Sala Street,		
	Rotorua	Post code	3046
Work telephone	07 343 5899	Mobile	
Email	warren.grigsby@scionresearch.com		

### 1b. Academic qualifications

- 1994 D.Phil in Chemistry, University of Waikato  
 1991 MSc in Chemistry, 1st Class Honours University of Waikato  
 1989 BSc in Chemistry, University of Waikato

### 1c. Professional positions held

- 2003–present Senior Scientist/Research Leader, Scion (formerly Forest Research)  
 1997–2002 Scientist, Forest Research (New Zealand Forest Research Institute)  
 1996–1997 Post-doctoral Researcher, Monash University, Melbourne, Australia.  
 1994–1996 Post-doctoral Research Fellow, University of California, Davis, USA.

### 1d. Present research/professional speciality

My research spans synthetic and polymer chemistry applications of biopolymer systems. I also have interests in the synthesis and development of natural and synthetic resin and adhesive formulations for use in engineered wood products and high performance composites and understanding of natural fibre-polymer interactions in wood and wood-plastic composites. Current research activities include the synthesis of totally biobased adhesives; novel wood modification processing strategies; and adapting polyphenolics in a range of industrial and consumer applications. Through my role I take a lead in the direction and coordination of innovative research efforts as well as industry liaison on both commercial and government-funded research. I have been with Scion since 1997 and have a previous background in organic, main group and transition metal-based synthetic chemistries, macromolecular chemistry, X-ray crystallography and chemical vapour deposition processing.

### 1e. Total years research experience

26 years

### 1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

- 2019 Awards finalist, “Bio-based Material of the Year 2019” administered by Nova Institute for the International Conference on Bio-based Materials, Germany, May.  
 2018 Science New Zealand Team Science Impact Award  
 2016 NZBio New Zealand Biotechnology of Year award, 2016  
 2016 Scion Science Impact Award 2016  
 2014 Japan Society for Promotion of Science Invitational Fellowship Award

- 2012 MBIE Programme Leader *Performance and scale up of new bioadhesives and their applications*
- 2006–2018 International organising committees for the Pacific Rim Biobased Composites Symposium, International Wood Adhesives Conference and Biopolymers and Bioplastics Conferences
- 2004– Member of Surface Coatings Association New Zealand
- 2001 Air New Zealand Forest Research Award for Standards of Excellence in Innovative/Pathbreaking Science
- 1989– Member of the New Zealand Institute of Chemistry

<b>1g. Total number of peer reviewed publications and patents</b>	Journal articles	Books, Book chapters, books edited	Conference proceedings	Patents
	83	-	-	3

## PART 2

### 2a. Research publications and dissemination

#### Peer-reviewed journal articles (Selected)

Hubbe, MA, **Grigsby, WJ** (2019) From Nanocellulose to Wood Particles: A Review of Particle Size vs. the Properties of Plastic Composites Reinforced with Cellulose-based Entities, *Bioresources*, in press.

**Grigsby, WJ**, Scott, SM, Plowman-Holmes, MI, Recabar, K (2019) Combination and processing keratin with lignin as novel biocomposite materials for additive manufacturing technology, *Acta Biomaterialia*, in press.

Altgen D, **Grigsby W**, Altgen M, Rautkari L, Avramidis G, Mai C. Analyzing the UF resin distribution in particle boards by confocal laser scanning microscopy, *Composites A*, in press.

Grosse C, **Grigsby WJ**, Noël M, Treu A, Thevenon-Brillard MF, Gérardin P (2019) Optimising chemical wood modification with oligomeric lactic acid by screening of processing conditions. *Journal of Wood Chemistry and Technology*, published online May 2019, doi: 10.1080/02773813.2019.1601739.

**Grigsby WJ**, Gager V, Recabar K, Krause A, Gaugler M, Luedtke J (2019) Visualising wood-polymer interfaces developed between wood and poly(lactic acid) in sandwich laminate composites, *Fibers* 7(2): 15 doi:10.3390/fib7020015

Luedtke J, Gaugler M, **Grigsby WJ**, Krause A (2019) Understanding the development of interfacial bonding within PLA-based thermoplastic composites. *Industrial Crops and Products* 127: 129-134, doi: 10.1016/j.indcrop.2018.10.069

Jakes JE, Frihart CR; Hunt CG, Plaza NZ, Lorenz L, **Grigsby WJ**, Ching DJ, Kamke F, Gleber S-C, Vogt S, Xiao X (2018) X-ray methods to observe and quantify adhesive penetration into wood. *Journal of Materials Science* 54(1): 705-718, doi: 10.1007/s10853-018-2783-5

Garrity N, **Grigsby WJ**, Jin J, Edmonds NR (2017) Rheology behaviours exhibited by soy protein systems under dynamic aqueous environments. *Journal of Applied Polymer Science* 134(46): 45513, doi: 10.1002/app.45513

Kathirgamanathan K, **Grigsby WJ**, Al-Hakkak J, Edmonds NR (2017) Molecular weight fractionation of high polydispersity native celluloses. *Cellulose* 24(11): 5261-5265, doi: 10.1007/s10570-017-1422-7

Jakes JE, Hunt CG, Yelle DJ, Lorenz L, Hirth K, Gleber S-C, Vogt S, **Grigsby W**, Frihart CR (2015) Synchrotron-based X-ray fluorescence microscopy in conjunction with nanoindentation to study molecular-scale interactions of phenol-formaldehyde in wood cell walls. *ACS Applied Materials and Interfaces* 7(12): 6584-6589, doi: 10.1021/am5087598

Herold N, Dietrich T, **Grigsby WJ**, Franich RA, Pfriem A (2015) Changes in stiffness of wood veneer during furfuryl alcohol modification. *European Journal of Wood and Wood Products* 73(5): 693-695, doi: 10.1007/s00107-015-0941-x

Noel M, **Grigsby WJ**, Volkmer T (2014) Investigating the viscoelastic properties and mechanical performance of wood modified by bio-polyester treatments. *Journal of Renewable Materials* 2(4): 291-305, doi: 10.7569/JRM.2014.634118

Dallmeyer JI, **Grigsby WJ**, Kadla JF (2013) Electrospinning with condensed tannins: Effects on co-spinning with zein. *Journal of Wood Chemistry and Technology* 33(3): 197-207, doi: 10.1080/02773813.2013.773354

**Grigsby WJ**, Kadla JF (2013) Evaluating poly(lactic acid) fibre reinforcement with modified tannins. *Macromolecular Materials and Engineering* 299(3): 368-378, doi: 10.1002/mame.201300174.

Luo C, **Grigsby WJ**, Edmonds NE, Al-Hakkak J (2013) Novel biobased thermosets reinforced by tannin-lipid formulations. *Acta Biomaterialia* 9: 5226-5233.

#### Refereed conference proceedings (selected)

Jakes J, Hunt C, Yelle D, **Grigsby WJ**, Frihart C, Vogt S, Gleber S-C (2013) Mapping adhesive infiltration in wood cell walls with synchrotron x-ray fluorescence microscopy. Proceedings of International Conference on Wood Adhesives, October 9-11th, 2013, Toronto, Canada.

#### Patents

**Grigsby WJ** (2018) Impregnated Wood Product, NZ Patent application 746378

**Grigsby WJ** (2013) Adhesive for lignocellulosic materials, NZ Pat Appln No. 619348 and PTC application.

**Grigsby WJ**, McIntosh C, Warnes J, Anderson R, Suckling I (2005) Improvements in, or relating to adhesives. United States of America (7,319,115, 2008). Patents also held in New Zealand, Australia, and Canada