Hsin-Chen **Chen**

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Nanocellulose reinforced composite materials · Bio-based polymers

No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (R.O.C)

EDUCATION

M.Sc. in Forestry and Resource Conservation — Sep. 2018 – July. 2020 (Expected)

- Current GPA: 4.3/4.3, rank: 1/36
- National Taiwan University, Taipei, Taiwan

B.Sc. in Forestry and Resource Conservation — Sep. 2014 – Jun. 2018

- GPA: 4.06/4.3, rank: 1/58
- Minor: Horticulture and Landscape Architecture
- National Taiwan University, Taipei, Taiwan

RESEARCH project participation

Nanocellulose-waterborne Polyurethane Composites (Thesis Project) — Jan. 2019 – Present

- Synthesized waterborne polyurethane materials by controlling the ratio of the ingredients and the synthesis conditions and processes
- Evaluated the nanocellulose addition effects of the resultant composites
- Cooperated and presented in monthly meetings with Prof. Ru-Jong Jeng's Polymer Chemistry Laboratory in the Institute of Polymer Science and Engineering, National Taiwan University
- Poster presented (first author) in UTokyo-NTU Joint Conference 2019, Tokyo, Japan

Nanocellulose Polymeric Composites for Artwork Conservation — Jun. 2017 – Oct. 2019

- Wrote a research proposal with Prof. Feng-Cheng Chang and successfully received a research grant from the Ministry of Science and Technology of Taiwan
- Planned the experimental designs, produced the nanocellulose reinforced composite films, and conducted tests to evaluate the nanocellulose reinforcing effects
- Completed the 2017-2018 Undergraduate Research Program, Ministry of Science and Technology
- Oral presented (first author) in The Fourteenth Pacific Rim Bio-Based Composite Symposium, Makassar, Indonesia

Cellulose Nanofiber-based Aerogel Production — Jan. 2017 – Oct. 2018

- Produced cellulose nanofiber-based aerogel with various solid concentrations using freeze drying process
- Assisted the aerogel sample preparation and test execution
- Poster presented (second author) in 2018 Symposium of The Chinese Forestry association, Taipei, Taiwan

Bamboo-based Nanocellulose Whiskers Formed by Acid Hydrolysis — Aug. 2016 – Sep. 2017

- Produced nanocellulose whiskers from three species of domestic Taiwanese bamboo by designed acid hydrolysis conditions
- Assisted XRD tests submission and analyzed the crystallinity data
- Made a poster of the nanocellulose whisker producing procedure for 2017 domestic bamboo product exhibition in Taiwan

PUBLICATION

Journal article under review

- **Chen, H.-C.**, Tze, W.T.Y., and Chang, F.-C., "Effects of Nanocellulose Formulation on Physicomechanical Properties of Aquazol–nanocellulose Composites," Submitted to: Cellulose

Conference Papers

- **Chen, H.-C.**, Huang, Y.-C., Wu, C.-H., Jeng, R.-J., Chang, F.-C., "Investigation on the Fiber-reinforcing Effects of Nanocellulose-Waterborne Polyurethane Composites," UTokyo-NTU Joint Conference 2019, Dec. 9-10, 2019
- **Chen, H.-C.**, Tze, W.T.Y., and Chang, F.-C., "Effects of Nanocellulose Formulations on Hygroscopic and Mechanical Properties of Aquazol/nanocellulose Biocomposites," 2019 International Conference on Nanotechnology for Renewable Materials, Jun. 3-7, 2019
- Tze, W.T.Y., Wang, S.-H., **Chen, H.-C.**, and Chang, F.-C., "Crosslinking and carbonization of electrospun lignosulfonate fiber," 2019 International Conference on Nanotechnology for Renewable Materials, Jun. 3-7, 2019
- **Chen, H.-C.**, and Chang, F.-C., "Feasibility of Using Nanocellulose Composites for Artwork Conservation," Pacific Rim Bio-based Composites Symposium, Oct. 29-31, 2018
- Lee, H.-C., **Chen, H.-C.**, and Chang, F.-C., "Production of Cellulose Nanofiber-based Aerogel and Carbonized Aerogel," Forest Resource Sustainable Development Symposium, Oct. 18-19, 2018

WORK EXPERIENCE

Graduate Research Assistant — Aug. 2019 – Present

- Advanced Research Center for Green Materials Science and Technology, National Taiwan University
- Assistant to Prof. Feng-Cheng Chang, conducting research and providing study results
- Underwent bi-monthly meetings with center members

Teaching Assistant — Sep. 2019 – Jan. 2020

- Course: Forest Camp Practice Biomaterials
- Assisted in managing courses and syllabus
- Communicated with the companies and mills for 6 company visits and factory tours

Teaching Assistant — Sep. 2018 – Jan. 2020

- Course: Wood Anatomy and Lab
- Tutored students to improve the ability of acknowledging various types of wood cells and tissue under microscope observation
- Gave part of the lectures and developed course materials
- Managed labs, developed homework, and graded homework

Teaching Assistant — Sep. 2018 – Jan. 2019

- Course: Forest Products and Practice
- Managed labs, graded quizzes and homework
- Assisted sample preparation before class

HONORS and AWARDS

- Postgraduate Conference Attendance Grant, Ministry of Science and Technology — 2019
- UTokyo-NTU Joint Conference Attendance Grant, National Taiwan University — 2019
- Postgraduate Scholarship, School of Forestry and Resource Conservation — 2018
  Ranked top four in Special Admission Quotas for Recommended Students
- College Student Research Scholarship, Ministry of Science and Technology — 2017
- SUN, HAI Cultural Foundation Scholarship — 2017
- WANG, ZI-DING Forestry Scholarship — 2016
- Academic Excellence Award, National Taiwan University — 2015-2, 2016-2, 2017-1 and 2017-2
  Ranked in the top ten percent of the class in each semester