

**Biodata**

- Name:** Legesse Adane Bahiru
- **Date of birth:** 30 August, 1971
  - **Place of birth:** Sodo Dugda, Gurage zone, SNNPR, Ethiopia
  - **Marital status:** Married
  - **No children:** 3
  - **Religion:** Christian

**Address**

- Department of Chemistry, College of Natural and Computational Sciences, Hawassa University, Ethiopia
- **Mobile:** 00251-916395678
- **E-mail:** adanelegesse@gmail.com; adanelegesse@yahoo.com
  - **ORCID ID:** <https://orcid.org/0000-0001-5153-6946>.

**Areas of interest**

- Computer-Aided Drug Design
- Natural Product Chemistry
- Organic Synthesis
- Medicinal Chemistry

**Education**

- Ph.D from National Institute of Pharmaceutical Education and Research (NIPER), Punjab, India, 2011.

**Title of research project:** Computer-Aided Design and Synthesis of Potential Antimalarial Agents: Targeting *P. falciparum* DHFR Enzymes.

**Supervisors:** Prof. P.V. Bharatam (pvbharatam@niper.ac.in) and Prof. A. K. Chakraborti (akchakraborti@niper.ac.in)

**Financial sponsor:** The Government of Federal Democratic Republic Ethiopia, Ministry of Education, Addis Ababa.
- M.Sc. in Organic Chemistry from Addis Ababa University, Addis Ababa, Ethiopia, Feb. 2000.

**Title of the research project:** Extraction and characterization of New Bianthraquinones from the stem barks of *S. dedimobyra* and *S. floribunda*.

**Supervisor:** Prof. Gizachew Alemayehu (galemayehu@ymail.com)

**Financial sponsor:** SNNPR government, Education Bureau, Awassa.
- B. Sc. in Chemistry from Addis Ababa University, Addis Ababa, Ethiopia, November, 1993.

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- Secondary Education: Alaba Special Wereda, Alaba Senior Secondary School (1982-1988).

#### **Other Diplomas and Certificates**

- Certificate on General Course on Intellectual Property Right from WIPO.(1 March - 15 April, 2009).
- Higher Diploma in Teaching, Jimma University, Jimma, Ethiopia, 2005.
- Certificate on Training on Change in management, organizational leadership and Process re-engineering (By Public Service College of Oromia, Feb 20-23, 2005)
- Certificate on Computer application training, Jimma University, **August 2004**.

#### **Academic Ranks Achieved to Date**

- **Full professorship since 5 February, 2020 (Hawassa University)**
- Associate Professor (Hawassa University, since October, 2015)
- Associate professor since November 2014 (Jimma University)
- Assistant professor, Feb 2011 – Nov 2014 (Jimma University)
- Lecturer, from September 1999- Jan 2011 (Jimma University)

#### **Professional Membership**

- The Chemical Society of Ethiopia

#### **Postdoc experience**

CV Raman fellowship at the **Department of Medicinal Chemistry**, National Institute of Pharmaceutical Education and Research (NIPER), Punjab, India (8 July 2013-26 December 2013)

- **Project:** Design and synthesis of nitrogen-containing hetrocycles as anti-TB agents
- **Host professor:** Professor A.K. Chakraborti (akchakraborti@niper.ac.in)

#### **International and National Conferences and Workshops Attended**

- The 31<sup>st</sup> Annual conference of the Chemical Society of **Ethiopia**, 2015, Addis Ababa, Ethiopia.
- The 30<sup>th</sup> Annual conference of the Chemical Society of **Ethiopia**, Feb 28-March 2, 2014, Mekelle, Ethiopia.
- The 5<sup>th</sup> Annual Research Conference at Jimma University, **Ethiopia**, 6-7 Feb, 2014
- The 29<sup>th</sup> Congress of Ethiopian Chemical Society, Addis Ababa, **Ethiopia**, Feb 22-24, 2013
- The 28<sup>th</sup> Congress of Ethiopian Chemical Society, Gondar, **Ethiopia**, Feb 2012
- The 3<sup>rd</sup> Annual Research Conference at Jimma University, **Ethiopia**, Jan 2012
- 4th International Symposium on Current Trends in Drug Discovery Research, Lucknow, **India** (17-21 February, 2010).
- Badung International Conference on Medicinal Chemistry, Jakarta, **Indonesia**. (6-8 August, 2009).

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- Indo-German on Conference on Modeling Chemical and Biological (Re)activity, Hyderabad, **India**. (26-29 September, 2007).
  - Green chemistry, NIPER, Punjab, **India**. (3-4 September, 2007).
  - Professor Ram Chand Paul 3rd National Annual Symposium on Recent Trends in Chemistry, Department of Chemistry, Punjab University, **India**. (1-2 March, 2007).

#### **Employment history**

- Professor rank in Organic Chemistry, Since February 2020 (**Hawass University**).
- Associate Professor of Chemistry, since October 11, 2015 (**Hawass University**).
- Associate Professor of Chemistry, November 2014-October 11, 2015 (Jimma University).
- Assistant Professor of Chemistry, Jimma University, Feb 2011-October 2014.
- Lecturer, Jimma University, Jimma, Ethiopia: September 1999-Dec 2005, and from April 2010-February 2011.
- Coordinator of Continuing and Distance Education, Faculty of Education, Jimma University, 2004-2006.
- High School Chemistry teacher, Angacha Senior Secondary School, Angacha, Southern Ethiopia, Ethiopia: January 1994-June 1997. Department head at Angacha Senior Secondary School, SNNPR, January 1994-June 1997

#### **Member Editor of manuscripts submitted to Academic Journal publishers**

- (Journal names the Journals are (i) Educational Research and Review and (ii) African Journal of Biotechnology) and Springer publishers (Journal name Medicinal Chemistry Research);
- Chief editor of Pharma Multi Discinary Journal (PMRJ) since Dec2023, Pharma College, Hawassa, Ethiopia.
- Asian Council of Science Editors (ACSE)

#### **Preparation of teaching materials**

- Laboratory Manual for Practical Organic Chemistry I (Completed and currently in use since July **2012**).
- Laboratory Manual for Practical Chemistry III (Completed and currently in use since September **2014**).
- Module of Organic Chemistry I, Jimma University, **2004**.

#### **Awards**

- Certificate of best researcher of the year by Jimma University, **June 2013**.
- The **Best Innstructor of the Semester**, Pharma College, Hawassa, 2018/2019 Academic Year

#### **Institutional and community services**

- ✓ **Institutional services (Hawassa University)**

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- Focal person for office Institutional transformation, College of Natural and Computational sciences
  - Academic Staff Affairs Committee member, College of Natural and Computational sciences
  - Developed PhD curriculum in Organic Chemistry (Evaluated and accepted by External reviewers)
  - Revised MSc curriculum in Organic Chemistry (Submitted to the Department)
  - Participating in other several committee activities
  - Coordinator of PG program, Department of Chemistry, College of Natural and Computational sciences
- ✓ **Professional contributions and Community services**
- Secretary of Parent-Teacher-Student union at DereSelam Kidist Silassie School, Hawassa
  - Served as a volunteer to teach Grade 12 students at Tabor Evangelical College, Hawassa (**Oct 2015-June 2016**)
  - **Professional contribution** in teaching Medicinal Chemistry courses to Pharmacy students, **Dilla University, Jan 2020**
  - Offered Medicinal Chemistry and Natural Product Chemistry related courses to PhD students in Department of Chemistry, **Wollega University and School of Pharmacy, AAU, Jan 2017.**
  - Offered Medicinal Chemistry courses at The **Pharma Health Science College, Hawassa (Since March 2016 –till today )**
  - Offered Medicinal Chemistry courses at The **Pharma Health Science College, Shashemen Campus (September 2021-January 2024)**
  - Served as external evaluator of thesis of MSc and PhD students at The Department of Chemistry, **Adama Science and Technology University**, Adama; Wolaita Sodo University, Wachemo University, Jimma University (for more than 3 years face-to-face and/or online mode)
  - Offered Medicinal Chemistry I at The Department of Chemistry and **Health Science College, Hawassa University (Dec 2019-Feb 2020; August 2023)**
  - Offered courses (Advanced Organic Chemistry **to MSc students**) at The Department of Chemistry, **Bule Hora University, January, 2021.**
  - Vice chairman Saint Silassie Church, Hawassa, Ethiopia (**Feb 2020-March 2024**)
  - Chairperson of Board of Debreslam, Primary School, Hawassa, Ethiopia (Since **March 2024**)
  - Offering courses (**Organic Polymer and Spectroscopy**) **to MSc students**) at The Department of Chemistry, **Wachamo University, April, 2020, May 2021; Organic Spectroscopy, Jan, 2023)**

- Evaluated **PhD curriculum** in The Department of Chemistry, **Bahir Dar University, Jan 2023.**
- Evaluated documents of staffs of Wollega University, Department of Chemistry; Adama Science and Technology University, Department of Chemistry for promotion to Professor rank.
- PhD Thesis evaluation in Adama Science and Technology University, Department of Chemistry, **May 24-25, 2023. (2 students: Teshome Degifie and Demis Zelalem)**
- PhD Thesis evaluation in **Ms. Divya Rana** Tomar Faculty of Doctoral Studies and Research Shri Vaishnav Vidhyapeeth, **Vishwavidyalaya, Indore, India, March 5-6, 2024.**
- Evaluated PhD joint program of Dambi Dolo University, **26 Nov, 2024**, Wollega
- Offered a seminar to **Dambi Dolo University** staff, **25 Nov, 2024**, Wollega
- Offered a seminar to **College of Natural and Computational Science College** staff, Hawassa University, **19 Dec, 2024**, Hawassa

#### Community Services

- Participated in CBTP program implementation, Jimma University
- EDIR committee service as chairman for the last 2 years (in Mery Joy site University teachers condominium)
- Voluntary services in religious institutions
  1. Vice administrator of Hawassa Debre Selam Kidist Silassie Church, Hawassa, Ethiopia, Feb 2020-March 2024.
  2. Chair person of The Board of Kidist Silassie KG and Primary School, Hawassa, Ethiopia.
  3. Member of Committee for Construction of Archbishop's Palace of Sidama Diocese, Hawassa, Ethiopia.

#### Publications of Research Articles and Reviews

1. **Legesse Adane**, Prasad V. Bharatam. Tautomeric Preferences and Electron Delocalization in Biurets, Thiobiurets and Dithiobiurets. *Intl. J. Quant. Chem.* **2008**, 108, 1277-1286 (IF=1.196, 2006).
2. **Legesse Adane** and Prasad V. Bharatam. Modeling and Informatics in the Analysis of PfDHFR Enzyme Inhibitors. *Current Med. Chem.* **2008**, 15, 1552-1569 (IF=4.944, 2007).
3. PV. Bharatam, DS. Patel, **Legesse Adane**, A. Mittal and S. Sundriyal. Modelling and Informatics in the Designing Anti-diabetic Agents. *Current Pharm. Design.* **2007**, 13, 3518-3530 (IF=5.20, 2007).
4. **Legesse Adane** and Prasad V. Bharatam. 3D-QSAR Analysis of Cycloguanil Derivatives as Inhibitors of A16V + S108T Mutant PfDHFR enzyme. *J. Mol. Graph. Model.* **2009**, 28, 357-367 (IF=2.347, 2009).

5. Ahmed Mehdi, **Legesse Adane**, Dhilon S. Patel and Prasad V. Bharatam. Conformational and Reactivity Studies on Guanylthiourea: A Quantum Chemical Study. *J. Comput. Chem.* **2010**, 31, 1259-1267 (IF=3.390, 2009).
6. **Legesse Adane**, Dhilon S. Patel and Prasad V. Bharatam. Shape-and Chemical Feature-Based Virtual Screening: Identification of Leads as Potential Inhibitors of PfDHFR enzyme. *Chem. Biol. Drug. Des.* **2010**, 75, 115-126 (IF=2.375, 2008).
7. **Legesse Adane**, Prasad V. Bharatam and V. Sharma. A Common Feature-Based 3D Pharmacophore Model Generation and Virtual Screening: Identification Leads as Potential Inhibitors of Quadruple mutant PfDHFR enzyme. *J. Enzyme Inhib. Med. Chem.* **2010**, 25, 635-645 (IF=1.636, 2008).
8. **Legesse Adane** and Prasad V. Bharatam. Binding Interactions of PfDHFR Enzyme Inhibitors in the Active Site: Molecular Docking Studies. *Ind. J. Pharm. Sci.* **2010**, 72,324- 333.
9. **Legesse Adane** and Prasad V. Bharatam. Computer-aided molecular design of 1H-Imidazol,2,4-diamine derivatives as potential inhibitors of PfDHFR enzyme. *J.Molecular Model.* **2011**, 17:657-667.
10. Gizachew Alemayehua, **Legesse Adane** and Berhanu M. Abegaz. A New Bianthracene Carabinopyranoside from *Senna septemtrionalis*. *Nat. Prod. Commun.* **2010**, 75, 747-750.
11. **Legesse Adane**, Diriba Muleta. Assessment of the adverse effects of plastic bag wastes on environment and awareness of community: A Case Study in Jimma City. *J. Toxicol. Env. Health Sci.* **2011**, 3(8), 234-248.
12. **Legesse Adane**, Asmamaw Abejie. Assessment of laboratory chemicals' risk perception among undergraduate students majoring chemistry and biology: A case study at Jimma University, Southwestern Ethiopia. *World Appl. Sci. J.* **2012**, 16, 290-299.
13. **Legesse Adane**, Antehun Admas. Relevance and Safety of Chemistry Laboratory Experiments from Students' Perspective: A Case Study at Jimma University, Southwestern Ethiopia: Educational Research. **2011**, 2(12), 1749-1758.
14. Habtamu Gelaw, **Legesse Adane**, Yinebeb Tariku and Asrat Hailu. Isolation of Crotepoxide From Berries of *Croton Macrostachyus* and Evaluation of Its Anti-Leishmanial Activity. *J. Pharmacogn. Phytochem.* **2012**, 1, 15-25.
15. Banchiwossen Bekele, **Legesse Adane**, Yinebeb Tariku and Asrat Hailu. *Med Chem Res.* **2013**, DOI 10.1007/s00044-013-0467-x. (IF = 1.612, 2012)
16. Mulugeta Tessema, **Legesse Adane**, Yinebeb Tariku, Diriba Muleta, Shiferaw Demissie. Isolation of Compounds from Acetone Extract of Root Wood of *Moringa stenopetala* and Evaluation of their Antibacterial Activities. *Res. J. Med. Plant.* **2013**
17. Sileshi Woldeyes, **Legesse Adane**, Yinebeb Tariku, Diriba Muleta and Tadesse Begashaw. Evaluation of Antibacterial Activities of Compounds Isolated From *Sida rhombifolia* Linn. (Malvaceae). *Natural Products Chemistry & Research*, **2013**

18. **Legesse Adane**, Shweta Bhagat, Sonam Bhatia, Minhajul Arfeen, Rachada Sirawaraporn, Worachart Sirawaraporn, Asit K. Chakraborti, Prasad V. Bharatam. Design and synthesis of guanylthiourea derivatives as potential inhibitors of *Plasmodium falciparum* Dihydrofolate Reductase enzyme. *Bioorg.Med.Chem. Lett.* **2014**, 24, 613-617. (IF=2.338, 2014).
19. **Legesse Adane**, Rawa Mahitot, Getasew Assefa. A Survey on Awareness of Consumers about Health Problems of Air Fresheners: A Case Study at Jimma University. *World Applied Science Journal*, **2014**, 32, 884-890 (IF=0.23; 2014).
20. Adam Biftu, **Legesse Adane**, Yinebeb Tariku. Evaluation of antibacterial activities of compounds isolated from fruits of *Sida rhombifolia* Linn. *Middle-East Journal of Scientific Research* **2014**, 22, 681-689.
21. Abdissa Edilu, **Legesse Adane**, Delelegne Woyesa. Evaluation of antibacterial activities and phytochemical screening of the crude extracts of roots of *Caylusea abyssinica* (**Fresen.**) *Middle-East Journal of Scientific Research* **2014**, 22, 960-965.
22. Abdissa Edilu, **Legesse Adane**, Delelegne Woyesa. *In vitro* antibacterial activities of compounds isolated from roots of *Caylusea abyssinica*. *Annals of Clinical Microbiology*. **2015**, 14, 15 (Impact factor 1.51, 2014)
23. Asit K. Chakraborti, Dinesh Kumar, Pradeep S. Jadhavar, Manesh Nautiyal, Himanshu Sharma, Prahlad K. Meena, **Legesse Adane**, Sahaj Pancholia. Convenient synthesis of 2,3-disubstituted quinazolin-4(3H)-ones and 2-styryl-3-substituted quinazolin-4(3H)-ones: Applications towards the synthesis of drugs. *RSC Advances*, **2015**, 5, 30819-30825 (Impact factor = **3.708**, 2015)
24. **Legesse A.**, Muluken A., Getasew A. A survey on awareness of consumers about health problems of food additives in packaged foods and their attitude toward consumption of packaged foods: A case study at Jimma University. *Int. Food Res. J.* **2016**, 23, 375-380.
25. Shweta Bhagat, Minhajul Arfeen, **Legesse Adane**, Savita Singh, Prati Pal Singh, Asit K. Chakraborti, Prasad V. Bharatam Guanylthiourea derivatives as potential antimalarial agents: Synthesis, *in vivo* and molecular modelling studies. *European J. Med. Chemistry*, **2017**, 135, 339-348. (IF= **4.519**, 2016)
26. Dagne Addisu, **Legesse Adane**, P. Vijayalakshmi. Phytochemical investigation and evaluation of minimum antibacterial inhibitory concentrations of methanolic extracts of the root and leaves of *Aloe yavellana*. *World J Agri. Sci.* **2016**, 12 (3): 190-195, DOI: 10.5829/idosi.wjas.2016.12.3.23716
27. Bogalech Chafamo, **Legesse Adane**, Fikre Mamo. Phytochemical investigation of the roots extracts of *Terminalia brownie* and isolation of dimethyl terephthalate. *J. Pharmacognos. Phytochemistry*. **2018**, 7, 664-670. (Impact factor:GIF: 0.255 (2018))

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28. Mesfine Shiferaw, **Legesse Adane**, Israel Alemayehu, Determination of Caffeine Content of Bale Coffee Using HPLC. *Food Science and Quality Management*. **2018**, 73, 23-32. (IC impact factor: 4.5, 2018)
29. Tamiru Maru, **Legesse Adane**, Kibret Fekadu. Comparison of caffeine contents of Yirgacheffe and Harar coffee beans using HPLC analysis. *Paripex Indian Journal of Research*, **2018**,7,391-395.
30. Bihon Abera, **Legesse Adane**, Fikre Mamo. Phytochemical investigation the root extract of *Syzygium guineense* and isolation of 2,3,23-trihydroxy methyl oleanate. *J. Pharmacognos. Phytochemistry*. **2018**, 7, 3104-3111.
31. Filippo Tamiru, **Legesse Adane** and Banchiwosen Bekele. Phytochemical screening of root extract of *Momordica boivinii* and isolation of two steroids. *Research Journal of Phytochemistry*. **2018**, 12, 21-34. DOI: 10.3923/rjphyto.2018.21.34
32. Derilo Bekeri, **Legesse Adane** and Fikre Mamo. Phytochemical investigation and isolation of compounds from *Ajuga integrifolia* root extract. *World J. Chem.*, 13, 01-13, **2018**.
33. **Legesse Adane**, Mulugeta Teshome and Yinebeb Tariku. Isolation of compounds from root bark extracts of *Moringa stenopetala* and evaluation of their antibacterial activities. *J. Pharmacognosy and Phytochemistry*, **2019**; 8(3): 4228-4244
34. **Legesse Adane**. Preparation of laundry soap from used cooking oils: getting value out waste. *Scientific Research and Essays*. **2020**, 15, 1-10. <https://doi.org/10.5897/SRE2019.6649>
35. Nigussie Sintayehu, **Legesse Adane**: Phytochemical Screening and Isolation of Fatty Acid and Fatty acid Esters of Triterpene from Root Extract of *Vernonia auriculifera* Grown in Sidama zone, Southern Ethiopia. *J. Pharmacognosy and Phytochemistry*, **2020**, 9, 1702-1710
36. Yadessa G. Keneni, **Legesse A. Bahiru**, Jorge M. Marchetti: Effects of different extraction solvents on the amount of oil extracted from *Jatropha* seeds and the potential of de-oiled seed residues as a biofuel. **BioEnergy Research**(Published online **09 November, 2020**; <https://doi.org/10.1007/s12155-020-10217-5>)
37. Mulugeta Teshome, **Legesse Adane**, Yinebeb Tariku: Phytochemical screening and evaluation of antibacterial activities of root bark extracts of *Moringa stenopetala*. *Journal of Medicinal Plants Research*, **2021**, **15**, **1-6**(DOI: 10.3923/rjmp.2021.1.6)
38. **Legesse Adane**, Habtamu Abate, Tegene Tesfaye. Use of *Jatropha* seed oil and alkali solution obtained from its ash for soap making: an environmentally friendly and cost effective approach. **J Applied Sci. Environmental Management**, 2020, 24 (12) 2005-2015. (<https://dx.doi.org/10.4314/jasem.v24i12.1>);
39. Natnael Shamebo; **Legesse Adane**, Tegene Tesfaye: Phytochemical screening of crude extracts of roots of *Carduus chevallieri* and elucidation of structures of compounds isolated from them. **J Nat. Prod. Plant Res.** 2021, 11 (1): 1-12
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<http://scholarsresearchlibrary.com/archive.html>; www.scholarsresearchlibrary.com.

40. Tegene Tesfaye Tole, Eshetu Diriba; **Legesse Adane**, Bioactive Compounds from *Croton macrostachyus* and *Commiphora habessinica* Occuring in Ethiopia. **Adv Tradit Med (ADTM) (2021)**. <https://doi.org/10.1007/s13596-021-00570-x>.
41. **Legesse Adane**, Tesfaye Gelaye, Tegene Tesfaye. Exploring of the Potential of Parthenium weed ash as substitute for commercial alkali for preparation of laundry soap: As a means to control invasion of parthenium. *Frontier in Sustainability: Sustainable Chemical Process Design*, **2021**, 2, 1-11.; doi:10.3389/frsus.2021.607125.
42. Fitsum Demissie, **Legesse Adane**, Alemu Lelago. Isolation and Characterization of Biological Active Compound from Root Extract of *Thalictrum rhynchocarpum* Dill. *J. Chem. Pharmaceut. Res.* **2022**, 14, 39-46.
43. Lamessa Bekele Amejja, Misganew Tegegne Ayana, Zelalem Bitew Derese, Yinebeb Tariku, Fantahun Aklog Yihun, Mulugeta Tesemma Kassa, **Legesse Adane**, Qualitative phytochemical exploration guided in vitro antibacterial activity studies on crude stem bark extract of *Stereospermum kunthainum* (Bignoniaceae). DOI: <https://doi.org/10.21203/rs.3.rs-1294105/v1>
44. **Legesse Adane**, Kefale Firew, Tegene Tesfaye. Exploring the potential of water hyacinth ash as source of alkaline for soap production: As a means to control environmental pollution by the invasive weed. **Comprehensive Research and Reviews in Chemistry and Pharmacy**, **2022**, 01(01), 012–024.
45. **Legesse, A**; Motuma, T; Fillipo, T; Adrian, W; Matthew, S. Extraction and Characterization of Oil from *Trichilia Dregeana* (Luya) Seed Beans and Seed Shells. **J. Appl. Sci. Environ. Manage.** Vol. 27 (3) 607-614 March **2023**.
46. Tewodros Mulu, **Legesse Adane**, Dessalegne Bekele, Fillipo Tamru, Tizazu Sorsa. Phytochemical Investigation on The Root Extract of *Teclea Nobilis*, **J Traditional Med Applications**, **2022**, 1(1), 09-30.
47. Mihretu Mechoro; Sintayehu Tamirat; **Legesse Adane**. Mineral content and physicochemical characteristics of honey samples obtained from districts of Hadiya and Kembata Zones, SNNPR, Ethiopia. **Int. J. Multidisciplinary and Current Educational Res. (IJMCER)**, **September-October 2023**, 5 (2), 101-111.
48. **Legesse Adane**, Abera Tadesse, Tegene Tesfaye. Determination of Caffeine Content of Nensebo Coffee Beans, West Arsi Zone, Oromia Regional State, Ethiopia, Using UV/Vis and HPLC Methods. **African Journal Pure and Applied Chemistry**, **2023**, 17, 21-25.
49. Abinet Mekonnen, **Legesse Adane**, Filippo Tamiru. Phytochemical investigation and antibacterial activity test of the root extract of *Aloe calidophila*. *Asian J. Res. Pharmaceutical Sci. Biotechnol.* **2023**, 11, 12-24.

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50. Dagne Addisu, Kibret Fekadu, Salah Hamza, **Legesse Adane**. Antibacterial activity and Phytochemical Investigation on leaf and root extract of *Aloe gilbertii* Reynolds on clinical pathogens in Sidama Zone, Ethiopia. *African J. Biotechnology* **2024**,18(1), pp. 1-6, 2022).
  51. Tegene Tesfaye, Habtamu Hailu, **Legesse Adane**. Phytochemical constituents of the roots of *Heliotropium verdcourtii*. *Int. J. Secondary Metabolite*. **2024**, 11, 211-219.
  52. **Legesse Adane**; Mengisteab Mathewos. Assessment of the physicochemical properties of laundry soaps prepared from mango and avocado seed oils and their blends: giving attention to fruit left overs. (*J. Appl. Sci. Environ. Manage.* **2024**, 28 (5) 1393-1406).
  53. Genet Hoyamo, **Legesse Adane**, Zerihun Demirew and Mihret Dananto. Investigation of potentials of Water hyacinth (*Ecchornia crassipes*) grown in Lake Koka and Lake Abaya for bioethanol production. *Res. J. Chem. Sci.*, **2024**, 14(3), 1-10.
  54. Temesgen Babulo; **Legesse Adane**; Filippo Tamiru' Antibacterial activities of unsaturated fatty acids and stigmasterol isolated from stem extracts of *Ocimum lamiifolium*. *Asian Journal of Research in Pharmaceutical Sciences and Biotechnology* **2024**, 12, pp1-24.
  55. Abebe Simon; **Legesse Adane**, Performance of pharmaceutical logistics management system for maternal health medicines in selected public health facilities an Hawassa City, Ethiopia. *Pharma Multidisciplinary Res J.* **2025**;;2(1): 171-192
  56. Freweyni Hailu, **Legesse Adane**, Zerihun Demrew, Tesfakiros Semere' Evaluation of Potential of Sedge Grass (*S. tabernaemotani*) for Bioethanol Production. *The Journal of Energy and Development.* **2025**; 50 (Nos. 1-2):77-99
  57. Nardos Woldesenbet; **Legesse Adane**, Wubshet Getachew. Adherence to Antiretroviral Therapy and Factors Associated among Adult HIV Positives in Public Hospitals of Hawassa City, Sidama, Ethiopia, 2024. *Pharma Multidiscip. Res. J.* **2025**; 2(2):272-293.
  58. Takkele Regassa, **Legesse Adane**, Y.Swanalatha, Senthil Kumar. Phytochemical investigation of seed extract of *Datura stramonium* plants.. Directive Publications. *Open Access*, **2025**; 12: 1-9. [www.directivepublications.org](http://www.directivepublications.org)
  59. Takkele Regassa, **Legesse Adane**, Y.Swanalatha, Senthil Kumar. Review on the significant potential of medicinal plants used by Borana pastorals in Ethiopia for cancer therapy. Directive Publications. *Open Access*, **2025**; 12: 1-7. [www.directivepublications.org](http://www.directivepublications.org)
  60. Kifle Jilo, **Legesse Adane**, Fillipo Tamiru. Phytochemical analysis, evaluation of antioxidant activity, and investigation of antibacterial activity in euphorbia candelabrum root extracts. *Medicine in Omics.***2026**, 16;100051.
  61. Hillary Girmay, **Legesse Adane**, Meseret Tesema, Yishak Worku' Study on the Yield and Physicochemical Properties of Oils from Ethiopian Castor Seed (*Ricinus communis* L.) Varieties and Biodiesel Production. *Research Journal of Chemical Sciences.* Vol. 16(1), 1-10, February (2026)

62. Merihun Dawit, **Legesse Adane**, Derrese Daka. Antibacterial effect of herbal garlic (*Allium sativum*) and Lemon (*Citrus Limon*) extracts against clinically isolated bacteria at Hawassa, Ethiopia, *Asian Journal of Research in Pharmaceutical Sciences and Biotechnology*. 13(2), 2025, 24-46.
63. Nigussie Sintayehu and **Legesse Adane**. Antidiabetic activities and phytochemical constituents of selected medicinal plants from Ethiopian Flora: A brief review. *IJPSR*, 2026; Vol. 17(3): 824-847.

**(ii) Conference proceedings and abstracts**

- Demissie Shimelis Gebiba, Ramachandran Venkatesha Perumal, **Legesse Adane Bahiru**, Rita C. Alves, Anabela S.G. Costa, Nelson Andrade, Cláudia Silva, Fátima Martel, M. Beatriz P. P. Oliveira. Antioxidant, anti-inflammatory, anti-diabetic, and cytotoxic potential of ethanolic leaf extracts from *Englerina woodfordiodes* M. Gilbert and *Oncocalyx fischeri* (Ebg.) M. Gilbert. Published: The 5th International Electronic Conference on Foods session Chemistry and Physicochemical Properties of Foods. **25 October 2024**
- **Legesse Adane**, Dhilon S. Patel and Prasad V. Bharatam. Shape-and Chemical Feature-Based Virtual Screening: Identification of Potential PfDHFR Enzyme Inhibitors. *Med Chem. Res.* 2010, 9, S80.
- **Legesse, A.**; Bharatam, P. V. Applications of statistical methods in antimalarial drug design. *Frontiers of Interface between Statistics and Science*, Hyderabad, India. (**30 Dec, 2009 -1 January, 2010**).
- Bharatam, P. V.; Patel, D. S.; **Legesse , A.** Novel +N(!L)2 species with two lone pairs on nd Nitrogen -Examples from Antidiabetic and antimalarial Agents. The 2<sup>nd</sup> Indo-German Conference on Medicinal and Biological (Re)activity. Germany (**4-7October, 2009**).

**Poster presentations**

- **Legesse A. Bahiru** and Prasad V. Bharatam. Computer-Aided Molecular Design of 1Himidazole-2,4-Diamine Derivatives as Potential Inhibitors of P. falciparum DHFR Enzyme, Collaborative Drug Discovery 4th Annual Meeting, Collaborative Drug Discovery, Inc , CA, USA (**21 October, 2010**).
- **Legesse Adane**, Dhilon S. Patel and Prasad V. Bharatam. Shape-and Chemical Feature-Based Virtual Screening: Identification of Potential *PfDHFR* Enzyme Inhibitors. 4th International Symposium on Current Trends in Drug Discovery Research, Lucknow, India (**17-21 February, 2010**).
- **Legesse, A.**; Ahmed, M.; Patel, D. S.; Bharatam, P. V. Electronic analysis of guanylthiourea and the design of guanylthiourea-based potential antimalarial agents, Bandung, Indonesia. (**6-8 August, 2009**).

- **Legesse, A.;** Ahmed, M.; Bharatam, P. V. Tautomeric preferences of biuret and its sulfur analogs: An *ab initio* study. Indo-German Conference on Modeling Chemical and Biological (Re)activity, Hyderabad, India. (26-29 September, 2007).
- **Legesse, A.;** Bharatam, P. V. Conformational and tautomeric preferences of thiobiurest, dithiobiuret and thiobiuret analogs. Punjab University, India. (1-2 March, 2007).

#### Supervision of postgraduate students

- So far, I supervised more than 40 **MSc** students (as **major advisor**) and >15 MSc students (as **co-advisor**) at the Department of Chemistry. The students successfully defend their research results most of them with **Very Good** and some with **Excellet** grades.
- Currently there are 3 PhD students at The Department of Chemistry, Hawassa University

#### Community Services

##### List of advised MSc students and their research titles

###### (I) At Jimma University

- 1.**Habtamu Gelaw.** Isolation and characterization of compounds from berries of *Croton macrostachyus* and evaluation of their antileishmanial activities, Department of Chemistry, Jimma University, Ethiopia, September, **2011**.
- 2.**Banchiwessen Bekele.** Isolation and characterization of compounds from berries of *Moringa stenopetala* and evaluation of their antileishmanial activities, Department of Chemistry, Jimma University, Ethiopia, September, **2011**.
- 3.**Sileshi Woldeyes.** Isolation and characterization of compounds from roots of *Sida rhombifolia* and evaluation of their antibacterial activities, Department of Chemistry, Jimma University, Ethiopia, November, **2012**.
- 4.**Mulugeta Tessema.** Phytochemical investigation and *in vitro* antibacterial activity evaluation of root wood and root bark of *Moringa stenopetal*, Department of Chemistry, Jimma University, Ethiopia, December, **2012**.
- 5.**Adam Biftu.** Phytochemical investigation on the fruits of *Sida rhombifolia* Linn for their antibacterial activities, Department of Chemistry, Jimma University, Ethiopia, September, **2013**.
- 6.**Abdisa Edilu.** Phytochemical investigation antibacterial activity assay on the roots of *Caylusea abyssinica*, Department of Chemistry, Jimma University, Ethiopia, September, **2013**
- 7.**Mulugeta Teshome.** Phytochemical investigation and *in vitro* antibacterial evaluation of roots of *Moringa stenopetala*, Department of Chemistry, Jimma University, Ethiopia, September, **2013**.

###### (II) At The Deptment of Chemistry, Hawassa University

8. **Desalew Mossie.** Phytochemical investigation on the root of *Aloe camperi*, Department of Chemistry, Hawassa University, Ethiopia, June, **2017**.
9. **Filippo Tamiru.** Phytochemical investigation on the root of *Momordica boivinii*, Department of Chemistry, Hawassa University, Ethiopia, June, **2017**.
10. **Jemal Jado Tufa.** Phytochemical investigation of the root extract of *Aloe macrocarpa*. Department of Chemistry, Hawassa University, Ethiopia, June, **2017**.
11. **Tedros Mulu.** Phytochemical investigation on the root of *Teclea nobilis*, . Department of Chemistry, Hawassa University, Ethiopia, June, **2017**.
12. **Mesfin Shiferaw.** Determination of caffeine content of Bale coffee using HPLC analyses, Department of Chemistry, Hawassa University, Ethiopia, November, **2017**.
13. **Tamiru Mamo.** Comparison of caffeine contents of yirgacheffe and harar coffee using HPLC analysis, Department of Chemistry, Hawassa University, Ethiopia, November, **2017**.
14. **Getu Megersa.** Giving value to the waste: Preparation of laundry soap from used cooking oils, Department of Chemistry, Hawassa University, Ethiopia, November, **2017**.
15. **Tizazu Sorsa.** Phytochemical investigation on the root of xxxxxxxxxxxxxxxxx Department of Chemistry, Hawassa University, Ethiopia, November, **2017**
16. **Mulgojam Melkie.** Phytochemical investigation on the stem of *Aloe gilbertii* Department of Chemistry, Hawassa University, Ethiopia
17. **Mengisteab Matewos;** Avoiding the waste; Preparation of Soap from Avocado and Mango Seed oils Department of Chemistry, Hawassa University, Ethiopia,
18. **Tesfaye Gelaye,** Preparation of Soap from Used Cooking Oils and Ashe of Parthenium (*Parthenium hysterphorus*) weed: as a means to control invasion of parthenium, **November 2018**
19. **Habtamu Abate,** Preparation of Laundry Soap from Jatropha Ash and Seed Oil: All from One, **November 2018**
20. **Natinael Shamebo,** Phytochemical investigation, compound isolation and antibacterial activity of *Carduus chevallieri* root extracts, **November 2019**
21. **Abera Tadesse,** Determination of Caffeine Content of Nensebo Coffee Beans, Collected From Farm and Coffee Beans Purchased From Market, West Arsi Zone, Oromia Region, **November 2019**
22. **Mekonnen Lenjisa,** The Status Of Practical Chemistry Teaching And Factors Influencing It: The Case of Preparatory Schools in West Shewa Zone, Oromia Region, Ethiopia, **November 2019**
23. **Habtamu Tekebo,** Determination of Heavy Metal Level In Different Traditional Medicinal Plants Commonly used in Gedeo Zone, Yirgacheffe District, Southern Ethiopia, **November, 2019**.

24. **Kefalew Fire**, Evaluation of Ash of Water Hyacinth (*Eichhornia Crassipes*) as Source of Alkali For Soap Preparation: A Means To Control Invasion of The Noxious Plant on Water Bodies, **November 2019**
25. **Getachew Bufebo**, Assessment of the Level of Heavy Metals and Physico-Chmical Parameters of Sana (Upper And Bottom Streams) and Soke Rivers in Hadero Town, Kembata Tembaro Zone, South Nation Nationality People Region, Ethiopia, **November 2019**
26. **Beza Worku**, Phytochemical Investegation on the Root Extracts of *Hagenia abyssinica*, **November, 2019**.
27. **Habtamu Andemo**, Investigation Of Phytochemicals from the Medicinal Plant *Kalanchoe Petitiانا* (Endawula) Leaves, **November, 2019**.
28. **Adane Butana**, Phytochemical investigation and antibacterial activity tests on the root bark extracts of *Agarista salicifolia*. **Marh 2020**.
29. **Hilary Girmay**, Comparison of yield and physicochemical quality of oil from Ethiopian Castor bean seeds (*Ricinus communis* L.), and methyl ester profile of their biodiesel, **March 2021**
30. **Genet Hoyamo**, Investigation of water hyacinth (*ecchornia crassipes*) grown at two different lakes for bioethanol production, **March 2021**.
31. **Berhanu Bekele**: phytochemical investigation and antimicrobial activity of stem bark of *Buddleja polystachya*: **(June, 2022)**
32. **Aklilu Tesfaye**: Phytochemical investigation of root bark extract of *Croton macrostachyus*: **(Feb 2022)**
33. **Samrawit Tesshome**: Investigation of the chemical constituents of root of *Grewia schweinfurthii* **(October, 2021)**
34. **Finot Aklilu** Phytochemical investigation of stem bark extract of *Juniperus procera* **(October, 2021)**
35. **Firewoini Hailu**: evaluation of sedge grass (*schoenoplectus tabernaemotani*) for bioethanol production; **August, 2021**
36. **Milkesa Temesgen**: phytochemical analysis on the root of *Crinum abyssinicum* and compound characterization using spectroscopic techniques such as IR, 1 H and <sup>13</sup>CNMR, **2023**
37. **Abinet Mekonnen; Legesse Adane; FilippoTamiru**. Phytochemical Investigation And Antibacterial Activity Test of The Root Extract of *Aloe calidophila*. Medicinal Chemistry Research, **2023**

38. Temesgen Babulo; Legesse Adane; Filipp Tamiru. Phytochemical analysis and antibacterial activity test of the stem extracts of *Ocimum lamiifolium*.
39. **Demissie Shimelis**: Bioassay-Guided Phytochemical Studies and In Silico Molecular Docking; and Antioxidant, Antinflammatory, and Antidiabetic Evaluation of Selected Medicinal Plants of Sidama Region, Ethiopia (ASTU, Adama (Co-advising PhD student). **☛ student supervision on going**
40. **Aliy Woliy**: Phytochemical study of the root of *Euphorbia abyssinica* (Summer MSc) , **November, 2024.**
41. **Enimen Tiruneh**: Determination of some trace metals in the ground water of sidama region around Hawassa area (Summer MSc). **☛MSs student supervision on going**

**Co-advising (at Jimma University & Hawassa University)\_completed**

42. **Abebaw Hailegeorgis**. Effect of harvesting stage, form and duration of storage on physico-chemical properties of korarima (*Aframomum corrorima* (Braun) P.C.M. Jansen) collected from Masha District, Southwestern Ethiopia, Jimma University, College of Agriculture and Veterinary Medicine, September, **2014**
43. **Bihon Abera**. Phytochemical investigation on the root extract of *Syzygium guineense*, Department of Chemistry, Hawassa University, Ethiopia,. June, **2017.**
44. **Bogalech Chafamo**. Phytochemical investigation on the root extract of *Terminalia brownie*, Department of Chemistry, Hawassa University, Ethiopia,. June, **2017.**
45. **Dereilo Bekere**. Phytochemical investigation on the root extract of *Ajuga integrifolia*, Department of Chemistry, Hawassa University, Ethiopia, June, **2017.**
46. **Eshetu Diriba**, Phytochemical investigation on the stem bark of *Croton macrostachyus*, Department of Chemistry, Hawassa University, November, **2018**
47. **Abdulkadir Ibro**, Chemical studies of phytochemical investigation of the root of *Urtica dioica*, Department of Chemistry, Hawassa University, November, **2018**
48. **Tsehaynew Ayalew**, Chemical Constituents of The Roots of *Dichrostachys cinerea* **November 2019**
49. **Mitiku Geletu**, phytochemical investigation on the stem bark of *Solanum incanum*, **March 2020**
50. **Matiyas Gojole**, phytochemical investigation on the root of *Croton macrostachyus*, **March 2020**
51. **Misgana Garomsa**, Investigation of ethno botany, phytochemical and bacterial activity of some selected medicinal plants in Jima Rare Distirict, **November 2019**
52. **Nigussie G/Michael**, Phytochemical investigation on the root of *Achyranthes aspera*, **March 2020**

53. **Merkinah Mintebo**, Phytochemical screening of root of *Argemone mexicana*, **March 2020**
54. **Admas Yeshitila**, Investigation of the chemical constituents of the fruit peels of *Solanum incanum L.*, **March 2020**.
55. **Yadessa Gonfa**, Biodiesel production from *Jatropha curcas L.* seeds from different agro-climatic zones of Ethiopia: seed processing, oil extraction and optimization of biodiesel production using heterogenous **catalysts**. **PhD Thesis**, Department of Plant Sciences (IPV), Faculty of Biosciences Norwegian University of Life Sciences (NMBU), September 2020.
56. **Merihun Dawit**: Evaluation of antibacterial activities of herbal garlic (*Allium sativum*) and lemon (citrus limon), College of Health Sciences, Hawassa University, Ethiopia (May, 2022)

### Currently Supervising PhD students

#### At The Department of Chemistry, Hawassa University

1. Nigussie Sintayehhu
2. Takele Regasa
3. Banchiwessen Bekele

#### At The Department of Chemistry, Adama Sci. and Technol. University

1. Shimelis Demissie

#### List of referees

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3. Prof Dejene Ayele, Addis Ababa Science and Technology University, Department of Chemistry; **E-mail**: ayeledejene@yahoo.com
4. Dr Daniel Bisrat, Addis Ababa University, Ethiopia  
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5. Dr Tegene Tesfaye, Hawassa University, Ethiopia  
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