

CURRICULUM VITAE

Emine Adadan, Ph.D.

Department of Mathematics and Science Education
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ACADEMIC DEGREES

Ph.D.	2006	The Ohio State University, Columbus, OH Science Education <i>Dissertation:</i> Promoting High School Students' Conceptual Understandings of the Particulate Nature of Matter through Multiple Representations <i>Advisor:</i> Kathy C. Trundle <i>Co-Advisor:</i> Karen E. Irving
M.A.	2002	The Ohio State University, Columbus, OH Science Education
B.S.	1995	Marmara University, Istanbul Chemistry Education

WORK EXPERIENCE

December 2015-present	<i>Associate Professor</i> , Bogazici University (ÜAK – March 26, 2015)
Sept. 2009-Dec. 2015	<i>Assistant Professor</i> , Bogazici University
March 2007-Sept. 2009	<i>Lecturer</i> , Bogazici University.
Sept. 1995-Sept. 1999	<i>Chemistry/Science Teacher</i> , Özel Yeni Dünya High School, Istanbul. Teaching science for Grade 6 to 8, and teaching chemistry for Grade 9 to 11.

PUBLICATIONS

International Publications

- Adadan, E.** (in preparation). Exploring the role of metacognitive awareness in preservice chemistry teachers' understanding of gas concepts in multirepresentational instruction settings. *International Journal of Science Education*.
- Akaygun, S., **Adadan, E.** (Submitted). Reconsidering animations in learning chemistry. ICCE-Book Chapter.
- Akaygun, S., **Adadan, E.**, Kelly, R. (Accepted). Capturing preservice chemistry teachers' visual representations of redox reactions through storyboards. *Israel Journal of Chemistry (SCI)*
- Adadan, E.**, & Oner, D. (Accepted). Examining preservice teachers' reflective thinking skills in the context of web-based portfolios: The role of metacognitive awareness. *The Australian Journal of Teacher Education*.
- Adadan, E.**, & Yavuzkaya, M.N. (2018). Examining the progression and consistency of thermal concepts: A cross-age study. *International Journal of Science Education*, 40(4), 371-396. (SSCI) (Citations: WoS: 1; Scopus: 1)
- Kampschulte, L., Akaygun, S., **Adadan, E.**, Eilert, K., Heyduck, B. (2018). Interdisciplinary research brought to school—connecting chemistry and biology through nanotechnology. *Journal of Microbiology and Biology Education*, 19(1): doi:10.1128/jmbe.v19i1.1400.
- Adadan, E.**, Akaygun, S., Sanyal, A. (2017). Size dependent properties of matter: Is the size of a pill important? *Science Activities: Classroom Projects and Curriculum Ideas*, 54(3-4), 86-95. (ESCI) (Citations: WoS: 1; Scopus: 0)
- Oner, D., & **Adadan, E.** (2016). Are integrated portfolio systems the answer? An evaluation of a web-based portfolio system to improve preservice teachers' reflective thinking skills. *Journal of Computing in Higher Education*, 28(2), 236-260. (SSCI) (Citations: WoS: 2; Scopus: 3)
- Adadan, E.**, & Oner, D. (2014). Exploring the progression in preservice chemistry teachers' pedagogical content knowledge representations: The case of "Behavior of Gases." *Research in Science Education*, 44(6), 829-858. (SSCI) (Citations: WoS: 3; Scopus: 4)
- Adadan, E.** (2014). Investigating the influence of pre-service chemistry teachers' understanding of the particle nature of matter on their conceptual understanding of solution chemistry. *Chemistry Education Research and Practice*, 15(2), 219-238. (SSCI) (Citations: WoS: 4; Scopus: 4)
- Adadan, E.** (2013). Using multiple representations to promote Grade 11 students' scientific understanding of the particle theory of matter. *Research in Science Education*, 43(3), 1079-1105. (SSCI) (Citations: WoS: 9; Scopus: 6)
- Yakmaci-Guzel, B., & **Adadan, E.** (2013). Use of multiple representations in developing preservice chemistry teachers' understanding of the structure of matter. *International Journal of Environmental and Science Education*, 8(1), 109-130. (Citations: Scopus: 2; Google Scholar: 16)

- Adadan, E.**, & Savasci, F. (2012). An analysis of 16-17-year-old students' understanding of solution chemistry concepts using a two-tier diagnostic instrument. *International Journal of Science Education*, 34(4), 513-544. (SSCI) (Citations: WoS: 19; Scopus: 19)
- Oner, D., & **Adadan, E.** (2011). Use of web-based portfolios as tools for reflection in preservice teacher education. *Journal of Teacher Education*, 62(5), 477-492. (SSCI) (Citations: WoS: 30; Scopus: 25)
- Adadan, E.**, Trundle, K. C., Irving, K. E. (2010). Exploring Grade 11 students' conceptual pathways of the particulate nature of matter in the context of multirepresentational instruction. *Journal of Research in Science Teaching*, 47(8), 1004-1035. (SSCI) (Citations: WoS: 30; Scopus: 29)
- Adadan, E.**, Irving, K. E., Trundle, K. C. (2009). Impacts of multi-representational instruction on high school students' conceptual understandings of the particulate nature of matter. *International Journal of Science Education*, 31(13), 1743-1775. (SSCI) (Citations: WoS: 30; Scopus: 33)
- Beeth, M. E. & **Adadan, E.** (2006). The influences of university-based coursework on field experience. *Journal of Science Teacher Education*, 17(2), 103-120. (Citations: Scopus: 13; Google Scholar: 53)

National Publications

- Adadan, E.** (2017). Kimya öğretiminde yönlendirilmiş araştırmaya dayalı laboratuvar uygulamaları (2. Baskı). In A. Ayas and M. Sözbilir (Eds.), *Kimya öğretimi: Öğretmen eğitimcileri, öğretmenler ve öğretmen adayları için iyi uygulama örnekleri* (pp. 153-182). Ankara, Turkey: Pegem Akademi.
- Adadan, E.** (2015). Kimya öğretiminde yönlendirilmiş araştırmaya dayalı laboratuvar uygulamaları (1. Baskı). In A. Ayas and M. Sözbilir (Eds.), *Kimya öğretimi: Öğretmen eğitimcileri, öğretmenler ve öğretmen adayları için iyi uygulama örnekleri* (pp. 27-56). Ankara, Turkey: Pegem Akademi.
- Adadan, E.** (2014). Model-tabanlı öğrenme ortamının kimya öğretmen adaylarının maddenin tanecikli yapısı kavramını ve bilimsel modellerin doğasını anlamaları üzerine etkisinin incelenmesi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 33(2), 400-425. (Citations: Google Scholar: 10)
- Oner, D., & **Adadan, E.** (2013). Web tabanlı portfolyo oluşturarak öğretmen olmak: Öğretmenlik uygulamaları için pedagojik bir model. *G.Ü. Gazi Eğitim Fakültesi Dergisi (GEFAD)*, 33(3), 475-494. (Citations: Google Scholar: 1)

Other Publications

- Langbeheim, E., **Adadan, E.**, Akaygun, S., Hlatswayo, M., Ramnarain, U. (2017). *A comparison of student responses to pictorial and verbal items focusing on conceptual understanding of the particle model of matter*. In O. Finlayson, E. McLoughlin, S. Erduran, & P. Childs (Eds.) Electronic Proceedings of the ESERA 2017 Conference. Research, Practice and

Collaboration in Science Education, Part 11 (co-ed. J. Dolins), (pp. 1450-1457). Dublin, Ireland: Dublin City University. ISBN 978-1-873769-84-3.

Akaygun, S., **Adadan, E.**, Sanyal, A., & Acikel, B. (2016). *Nano and Health Module: Teacher Notes and Activity Sheets*. Unpublished booklet, Bogazici University, Istanbul, Turkey.

Oner, D., & **Adadan, E.** (2012). *Design of a customized web-based portfolio system to improve preservice teachers' reflective skills*. In M.B. Nunes and P. Isafas (Eds.) Proceedings of the IADIS International e-Learning Conference 2012, (pp. 509-512), Lisbon, Portugal 17-20 July 2012.

Oguz, A., Fortner, R., **Adadan, E.**, Gay, K., Kim, C-K., Yalcinoglu, P., Bektasli, B., Cook-Hoggarth, K. L., McDonald, C., Mishler, K., Manzo, L. (2004). *A look at environmental education through science teachers' perspectives and textbooks' coverage*. Atlanta, GA: Annual Meeting of the School Science and Mathematics Association. (ERIC Document Reproduction Service No. ED493919). (Citations: Google Scholar: 3)

Beeth, M. E., **Adadan, E.**, Firat, G. G., & Kutay, H. (2003). *The changing face of Bio 101 with regard to Nation's science standards*. St Louis, MO: Annual meeting of Association for the Educators of the Teachers of Science. (ERIC Document Reproduction Service No. ED474716). (Citations: Google Scholar: 1)

PAPER PRESENTATIONS

Adadan, E., & Akaygun, S. (2018, October). *Ortaokul ve lise öğrencilerinin nanoteknoloji farkındalıklarının incelenmesi*. A paper presented at International Necatibey Educational and Social Sciences Research Congress, Balikesir, Turkey.

Akaygun, S., **Adadan, E.** (2018, October). *Bir nanoteknoloji eğitimi çalıştayının ardından: Lise fen bilimleri öğretmenlerinin nanoteknoloji farkındalıkları*. A paper presented at International Necatibey Educational and Social Sciences Research Congress, Balikesir, Turkey.

Adadan, E., & Akaygun, S. (2018, October). *Kimya öğretmen adaylarının çökme tepkimelerini deneysel kanıtlar bağlamında incelemeleri*. A paper presented at Thirteenth National Congress on Science and Mathematics Education (13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), Pamukkale University, Denizli, Turkey.

Yavuzkaya, M. N., & **Adadan, E.** (2018, October). *Maddenin sınıflandırılması: Kesitsel bir çalışma*. A paper presented at Thirteenth National Congress on Science and Mathematics Education (13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), Pamukkale University, Denizli, Turkey.

Akaygun, S., **Adadan, E.** (2018, October). *Çökme tepkimelerini görselleştirme: Kimya öğretmen adaylarının farklılaşan animasyonları incelemeleri*. A paper presented at Thirteenth National Congress on Science and Mathematics Education (13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), Pamukkale University, Denizli, Turkey.

Akaygun, S., **Adadan, E.** (2018, September). *Understanding precipitation reactions through critiquing animations in variance*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Warsaw, Poland.

- Adadan, E.** (2018, September). *The influence of metacognitive awareness on preservice chemistry teachers' understanding of gas behavior*. A poster presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Warsaw, Poland.
- Adadan, E., & Akaygun, S.** (2018, September). *Capturing preservice chemistry teachers' understanding of precipitation reactions through their storyboards and animations*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Warsaw, Poland.
- Akaygun, S., **Adadan, E.**, Kelly R.M. (2018, August). *Critiquing the animations in variation: Do they help understanding?* A paper presented at the 25th Biennial Conference on Chemical Education, South Bend, IN, The United States.
- Akaygun, S., **Adadan, E.**, Kelly R.M. (2018, July). *Reconsidering animations in learning chemistry*. A paper presented at the 25th IUPAC International Conference on Chemistry Education (ICCE), Sydney, Australia.
- Akaygun, S., & **Adadan, E.** (2017, October). *Visualizing redox reactions: Storyboards and animations created by chemistry preservice teachers*. A paper presented at the 6th World Congress on Educational and Instructional Studies, Antalya, Turkey.
- Yavuzkaya, M. N., & **Adadan, E.** (2017, September). *Farklı yaş gruplarındaki öğrencilerin maddenin sınıflandırılmasıyla ilgili muhakemelerinin değerlendirilmesi*. A paper presented at the biannual meeting of Fifth National Congress on Chemistry Education (V. Ulusal Kimya Eğitimi Kongresi), Fırat Üniversitesi, Eğitim Fakültesi, Elazığ, Turkey.
- Adadan, E., & Akaygun, S.** (2017, September). *Çoklu gösterimlerin kimya öğretmen adaylarının redoks tepkimelerini anlamalarına etkisinin incelenmesi*. A paper presented at the biannual meeting of Fifth National Congress on Chemistry Education (V. Ulusal Kimya Eğitimi Kongresi), Fırat Üniversitesi, Eğitim Fakültesi, Elazığ, Turkey.
- Akaygun, S., & **Adadan, E.** (2017, September). *Redoks tepkimesinin süreç aşamalı çizimler ile görselleştirilmesi*. A paper presented at the biannual meeting of Fifth National Congress on Chemistry Education (V. Ulusal Kimya Eğitimi Kongresi), Fırat Üniversitesi, Eğitim Fakültesi, Elazığ, Turkey.
- Akaygun, S., **Adadan, E.**, & Yıldırım, G. (2017, September). *Redoks tepkimesinin deneysel kanıtlar ışığında değerlendirilmesi*. A paper presented at the biannual meeting of Fifth National Congress on Chemistry Education (V. Ulusal Kimya Eğitimi Kongresi), Fırat Üniversitesi, Eğitim Fakültesi, Elazığ, Turkey.
- Langbeheim, E., **Adadan, E.**, Akaygun, S., Hlatwayo, M., Ramnarain, U. (2017, August). *A comparison of student responses to pictorial and verbal items focusing on conceptual understanding of the particle model of matter*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Dublin, Ireland.
- Yavuzkaya, M. N., & **Adadan, E.** (2017, August). *Evaluating progression in students' reasoning about classification of chemical substances*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Dublin, Ireland.

- Adadan, E.** (2017, August). *Exploring preservice chemistry teachers' explanations about dissolving in the context of multirepresentational instruction*. A paper presented at the bi-annual meeting of European Science Education Research Association (ESERA), Dublin, Ireland.
- Akaygun, S., & **Adadan, E.** (2017, August). *An introduction of cutting-edge science: Understanding nanoworld*. A paper presented at the bi-annual meeting of European Science Education Research Association (ESERA), Dublin, Ireland.
- Akaygun, S., & **Adadan, E.** (2017, May). *Teaching nanotechnology as an extracurricular activity: Views of teacher*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Kusadasi, Aydin, Turkey.
- Adadan, E.,** & Akaygun, S. (2017, May). *Promoting students' perceptions toward responsible research and innovation through inquiry-based instruction on nanotechnology*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Kusadasi, Aydin, Turkey.
- Adadan, E.,** & Akaygun, S. (2017, May). *Investigating middle school students' perceptions about science learning environments in the context of inquiry-based instruction on global climate change*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Kusadasi, Aydin, Turkey.
- Akaygun, S., & **Adadan, E.** (2017, May). *An interactive exhibit on climate change*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Kusadasi, Aydin, Turkey.
- Akaygun, S., & **Adadan, E.** (2017, May). *Understanding redox reactions: Mental models of chemistry preservice teachers*. A paper presented at International Conference on Research in Education and Science (ICRES), Kusadasi, Aydin, Turkey.
- Acikel, B., Akaygun, S., & **Adadan, E.** (2016, September). *Science teachers' experiences about guiding students along the development of an interactive science exhibition artifacts*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Barcelona, Spain.
- Adadan, E.,** & Akaygun, S. (2016, September). *Exploring students' attitudes toward responsible research and innovation in the context of nanotechnology applications module*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Barcelona, Spain.
- Yavuzkaya, M. N., & **Adadan, E.** (2016, September). *Students' understanding of heat and temperature: A cross-age study*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Barcelona, Spain.
- Akaygun, S., & **Adadan, E.** (2016, September). *Understanding responsible research and innovation: Perspective of teachers*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Barcelona, Spain.
- Akaygun, S., & **Adadan, E.** (2016, August). *Integration of responsible research and innovation into cutting-edge science topics through student-curated exhibit*. 24th IUPAC International Conference on Chemistry Education (ICCE), Kuching, Sarawak, Malaysia.

- Adadan, E., & Akaygun, S.** (2016, June). *Teaching about global climate change in the light of responsible research and innovation*. A paper presented at ERPA International Congresses on Education, Sarajevo, Bosnia and Herzegovina.
- Akaygun, S., & **Adadan, E.** (2016, June). *Teaching nanotechnology applications in the light of responsible research and innovation*. A paper presented at ERPA International Congresses on Education, Sarajevo, Bosnia and Herzegovina.
- Adadan, E., & Akaygun, S.** (2016, May). *Reflections of community of learners' interactions to teachers' professional development*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Bodrum, Mugla, Turkey.
- Akaygun, S., & **Adadan, E.** (2016, May). *Student-curated exhibits on nanotechnology applications in health sciences*. A paper presented at International Conference on Education in Mathematics, Science and Technology (ICEMST), Bodrum, Mugla Turkey.
- Akkılık, E., & **Adadan, E.** (2015, September). *Tahmin Et-Gözle-Açıkla yöntemi bağlamında yansıtıcı öğrenme günlüğü tutmanın 10. sınıf öğrencilerinin elektrik ve manyetizma kavramlarını anlamalarına ve fizik dersine karşı motivasyonlarına etkisinin incelenmesi*. A paper presented at the biannual meeting of Second National Congress on Physics Education (II. Ulusal Fizik Eğitimi Kongresi), Orta Doğu Teknik Üniversitesi, Ankara, Turkey.
- Akaygun, S., & **Adadan, E.** (2015, September). *Sorumlu araştırma ve inovasyon odaklı nanobilimin sağlık alanındaki uygulamaları: Bir Bilim Kulübü faaliyeti örneği*. A paper presented at the biannual meeting of Fourth National Congress on Chemistry Education (IV. Ulusal Kimya Eğitimi Kongresi), Balıkesir Üniversitesi, Ayvalık, Balıkesir, Turkey.
- Adadan, E., & Oner, D.** (2015, September). *Examining the nature of preservice teachers' reflective skills in the context of web-based portfolios: The influence of metacognitive awareness*. A paper presented at the annual meeting of European Educational Research Association (EERA), Budapest, Hungary.
- Akaygun, S., **Adadan, E.**, Sanyal, A., & Acikel, B. (2015, September). *Integrating RRI to nanoscience applications as extracurricular activity in secondary science education*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Helsinki, Finland.
- Oner, D., & **Adadan, E.** (2015, May). *BOUNCE sistemi bağlamında öğretmen adaylarının yansıtıcı düşünme becerilerini geliştirme*. A paper presented at International Educational Technology Conference (Uluslararası Eğitim Teknolojisi Konferansı), Istanbul, Turkey.
- Oner, D., & **Adadan, E.** (2015, May). *Web tabanlı portfolyo kullanarak hizmet öncesi öğretmenlerinin yansıtıcı düşünme becerilerini geliştirme: BOUNCE örneği*. A paper presented at Ninth International Computer and Instructional Technologies Symposium (9. Uluslararası Bilgisayar ve Öğretim Teknolojileri Sempozyumu), Afyonkarahisar, Turkey.
- Adadan, E., & Oner, D.** (2015, May). *Hizmet öncesi öğretmenlerinin yansıtıcı düşünme becerilerinin niteliğinin BOUNCE sistemi bağlamında incelenmesi: Bilişüstü farkındalığın rolü*. A paper presented at Ninth International Computer and Instructional Technologies Symposium (9. Uluslararası Bilgisayar ve Öğretim Teknolojileri Sempozyumu), Afyonkarahisar, Turkey.

- Akaygun, S., **Adadan, E.**, & Sanyal, A. (2014, September). *Öğrenci, öğretmen, uzman ve toplumu birleştiren köprü: Sorumlu araştırma ve inovasyonun fen eğitimine entegrasyonu*. A paper presented at Eleventh National Congress on Science and Mathematics Education (11. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), Çukurova University, Adana, Turkey.
- Adadan, E.**, & Oner, D. (2014, September). *Öğretmen adaylarının üst bilişsel farkındalıkları ile öğretmenlik uygulamaları üzerine yansımalarının doğası arasındaki ilişkinin incelenmesi*. A paper presented at Eleventh National Congress on Science and Mathematics Education (11. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), Çukurova University, Adana, Turkey.
- Adadan E.**, Akaygun, S., & Sanyal, A. (2014, July). *Teachers' perceptions of the community of learners: The case of Turkey*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Jyväskylä, Finland.
- Oner, D., & **Adadan, E.** (2014, April). *An investigation of web-based portfolios as reflection instruments in preservice teacher education: The BOUNCE case*. A poster presented at the annual meeting of American Educational Research Association (AERA), Philadelphia, PA, The United States.
- Adadan, E.** (2014, April). *The influence of preservice chemistry teachers' particle theory understandings on their understanding of solution chemistry*. A paper presented at the International Conference of National Association of Research in Science Teaching (NARST), Pittsburgh, PA, The United States.
- Adadan, E.** (2013, September). *Kimya öğretmen adaylarının maddenin tanecikli yapısını anlama düzeylerinin modellerin doğasını anlamaları üzerine etkisinin model-tabanlı öğrenme ortamında incelenmesi*. A paper presented at the biannual meeting of Third National Congress on Chemistry Education (III. Ulusal Kimya Eğitimi Kongresi), Karadeniz Teknik Üniversitesi, Fatih Eğitim Fakültesi, Trabzon, Turkey.
- Oner, D., & **Adadan, E.** (2013, July). *Learning to teach with web-based portfolios: A pedagogical model for preservice teacher education*. A paper presented at the annual meeting of International Association for Development of the Information Society (IADIS), Prague, Czech Republic.
- Oner, D., & **Adadan, E.** (2012, July). *Design of a customized web-based portfolio system to improve preservice teachers' reflective skills*. A paper presented at the annual meeting of International Association for Development of the Information Society (IADIS), Lisbon, Portugal.
- Adadan, E.**, & Oner, D. (2012, July). *The development of preservice chemistry teachers' pedagogical content knowledge representations about the nature and behavior of gases*. A paper presented at the bi-annual meeting of European Conference on Research in Chemical Education (ECRICE), Rome, Italy.
- Adadan, E.**, & Savasci, F. (2011, September). *Evaluating secondary students' conceptions of solution chemistry using a two-tier diagnostic instrument*. A paper presented at the annual meeting of European Educational Research Association (EERA), Berlin, Germany.

- Savasci, F., & **Adadan, E.** (2011, September). *High school students' understandings of solutions and solubility concepts*. A paper presented at the annual meeting of European Educational Research Association (EERA), Berlin, Germany.
- Adadan, E.**, & Oner, D. (2011, September). *Preservice chemistry teachers' representations of pedagogical content knowledge*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Lyon, France.
- Adadan, E.**, & Savasci, F. (2011, September). *Development of a two-tier diagnostic test to assess the nature of Grade 11 students' conceptions of solution chemistry*. A paper presented at the bi-annual meeting of European Science Education Research Association (ESERA), Lyon, France.
- Oner, D. & **Adadan, E.** (2010, May). *Use of web-based portfolios as tools for reflection in preservice teacher education: A preliminary analysis*. A poster presented at the annual meeting of American Educational Research Association (AERA), Denver, CO.
- Adadan, E.** (2009, September). *Does model-based instruction on the particle theory of matter affect preservice chemistry teachers' conceptual understandings of dissolution and solubility concepts?*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Istanbul, Turkey.
- Yakmaci-Guzel, B. & **Adadan, E.** (2009, September). *Evaluating the use of visual representations for promoting pre-service chemistry teachers conceptual understandings of the structure of matter*. A poster presented at the bi-annual meeting of European Science Education Research Association (ESERA), Istanbul, Turkey.
- Adadan, E.** & Çirçi, R. (2008, August). *Model tabanlı öğretimin kimya öğretmen adaylarının çözünlürlükle ilgili kavramları anlamalarına etkisi*. A paper presented at Eighth National Congress on Science and Mathematics Education (8. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi), İzzet Baysal University, Bolu, Turkey.
- Adadan, E.**, Trundle, K. C., & Irving, K. E. (2008, April). *Progression in Grade 11 students' conceptions about the aspects of the Particle Theory*. A paper presented at the annual meeting of National Association of Research in Science Teaching, Baltimore, MD.
- Adadan, E.**, Irving, K. C., & Trundle, K. E. (2007, April). *High school students' learning pathways of the particulate nature of matter*. A paper presented at the annual meeting of National Association of Research in Science Teaching, New Orleans, LA.
- Adadan, E.**, Trundle, K. C., & Irving, K. E. (2006, April). *Learning with multiple representations: High school students' understanding of the particulate nature of matter*. A paper presented at the annual meeting of National Association of Research in Science Teaching, San Francisco, CA.
- Adadan, E.**, Trundle, K. C., & Irving, K. E. (2006, January). *High school students' understanding of the nature of matter*. Presented at the annual meeting of the Association for Science Teacher Education, Portland, OR.
- Adadan, E.** (2005, November). *Students' conceptions of the particulate nature of matter*. A paper accepted to be presented at the annual meeting of School Science and Mathematics Association, Forth Worth, TX.

- Adadan, E.**, Trundle, K. C., & Irving, K. E. (2005, October). *Promoting high school students' scientific understanding of the particulate nature of matter through multiple representations*. Presented at the annual meeting of Mid-Atlantic Region Association for Science Teacher Education, Breaks Interstate, VA.
- Oguz, A., Fortner, R., **Adadan, E.**, Gay, K., Kim, C. K., & Yalcinoglu, P. (2004, October). A *Look at environmental education through science teachers' perspectives and textbooks' coverage*. A paper presented at the annual meeting of School Science and Mathematics Association, Atlanta, GA.
- Adadan, E.** (2003, October). *What factors influence students' attitudes toward science? The relationship between attitudes and achievement in science*. A paper presented at the annual meeting of School Science and Mathematics Association, Columbus, OH.
- Adadan, E.** (2003, October). *Factors affecting international students class participation*. A paper presented at the annual meeting of School Science and Mathematics Association, Columbus, OH.
- Beeth, M. E., **Adadan, E.**, Firat, Gulsum G., & Kutay, H. (2003, January). *The changing face of Bio 101 with regard to Nation's Science Standards*. A paper presented at the National meeting of Association for the Educators of the Teachers of Science, St Louis, MO.

WORKSHOPS PRESENTED

- Adadan, E.** (March, 2010). *Constructivists approaches in teaching and learning of high school chemistry*. A workshop presented at Besiktas School District's In-service Teacher Training Workshop, Besiktas, Istanbul.
- Adadan, E.** & Savasci-Acikalın, F. (November, 2007). *Contemporary approaches in teaching and learning of science*. A workshop presented at Avcılar School District's In-service Teacher Training Workshop, Avcılar, Istanbul.

TEACHING

- SCED 340: Science, Technology and Society (Spring 2012)
- SCED 350: Secondary School Science Laboratory Applications I (since Fall 2007)
- SCED 360: Secondary School Science Laboratory Applications II (Spring 2008, 2009, 2010, 2011)
- SCED 414: Seminar on Practice Teaching in Chemistry (Spring 2013, 2015, 2017, 2018)
- SCED 320/420: Teaching Methods in Science and Mathematics Education (Fall 2007, 2009; Spring, 2013, 2016; Summer 2008, 2009, 2010)
- SCED 421: Teaching Methods in Chemistry (Fall 2008, 2010, 2011)
- SCED 422: Teaching Practice in Chemistry (Spring 2008, 2009, 2010, 2014, 2016)
- SCED 450: School Experience in Teaching Science I (Spring 2008, 2009, 2010)
- SCED 451: School Experience in Teaching Science II (Fall 2007, 2008, 2009)
- SCED 511: Instructional Science for Science and Mathematics Instruction (since Fall 2012)
- SCED 579: Graduate Seminar (Spring 2013, 2016)
- SCED 570: Research in Science and Mathematics Education (Spring, 2011)

SCED 572: Readings on Recent Research in Science and Mathematics Education (Spring 2014, 2015, 2017, 2018)
SCED 582: Special Topics in Science and Math Education I (Fall 2007)
SCED 59A: Guided Research II (Fall 2010)
SCED 599: Guided Research I (Spring, 2011; Fall, 2012)
SCED 690: Master's Thesis in Science Education (each semester, since Fall 2007)

GRADUATE STUDENT ADVISING

İlkay Buket Ataç Özdemir, Bogazici University, 2009. Teaching module that integrates visualization tools and inquiry to address the concepts of reversibility, incomplete conversion, and dynamic equilibrium. (M.S. Thesis, Co-advised with Prof. Dilek Ardaç).

Müjde Müge Ataman Mortaş, Bogazici University, 2011. Promoting grade 6 students' scientific understanding of the particulate nature of matter and the role of models in science through multi-representational instruction. (M.S. Thesis, Advisor)

F. Tuğba Tanrıverdi, Bogazici University, 2013. Pre-service chemistry teachers' conceptual understandings of solution chemistry in the context of multirepresentational instruction. (M.S. Thesis, Advisor)

Erhan Akkılık, Bogazici University, 2016. The Predict-Observe-Explain instruction coupled with reflective journal writing for teaching electricity and magnetism: A quasi-experimental study with Grade 10 students. (M.S. Thesis, Advisor)

Meltem İşcan, Bogazici University, 2012-present. Exploring the relationship between students' understanding of particle theory of matter and their conceptual understanding of vapour pressure. (M.S. Thesis, Advisor)

Ayşe Nur Çelikkol, Bogazici University, 2015-present. Investigating the conceptual understandings of Grade 9 students with different representational competences about the nature of gases and gas laws in the context of inquiry-based learning environment involving static or dynamic multiple representations (M.S. Thesis, Advisor)

Ezgi Korkut, Bogazici University, 2015-present. Students' conceptions of chemical bonding. (M.S. Thesis, Advisor)

Merve Nur Yavuzkaya, Bogazici University, 2016-present. Students' conceptual progression of chemical reactions: A cross-age study. (M.S. Thesis, Advisor)

Zeynep Polat, Bogazici University, 2012. A comparison between students' mental models of atomic structure and visualizations in textbooks for the concept of atom.(M.S. Thesis, Committee member)

Suzan Tuna, İstanbul Üniversitesi, 2012. Öğretmenlik uygulamalarının öğretmen adaylarının özyeterlik ve sınıf yönetimi inançlarına etkileri. (Master Tezi, Jüri Üyesi)

Sibel Yiğit, Bogazici University, 2013. Development and implementation of a training program designed to enhance prospective chemistry teachers' content knowledge, pedagogical content knowledge related to misconceptions and teaching efficacy beliefs. (M.S. Thesis, Committee member)

- Pınar İnal, Marmara Üniversitesi, 2013. Araştırmaya dayalı öğrenmenin madde konusunda ilköğretim öğrencilerinin akademik başarıları, kavramsal anlamaları, tutumları, bilimsel süreç becerileri ve iletişim becerileri üzerine etkisi. (Doktora Tezi, Jüri Üyesi)
- Ayla Gümrah, Marmara Üniversitesi, 2013. Bilimsel tartışma yönteminin ortaöğretim öğrencilerinin kimyasal değişimler konusunu anlamaları, bilimin doğası hakkındaki görüşleri, bilimsel süreç, iletişim ve argüman becerileri üzerine etkisi. (Doktora Tezi, Jüri Üyesi)
- Mine Doğucu, Bogazici University, 2013. The relationship between mathematics teachers' probability approaches and misconceptions. (M.S. Thesis, Committee member)
- Sibel Demir, Marmara Üniversitesi, 2014. Bilimsel tartışma ve araştırmaya dayalı tasarlanan laboratuvar programının, fen bilgisi öğretmen adaylarının bilimsel yaratıcılıklarına etkisi (Doktora Tezi, Jüri Üyesi)
- Oya Ağlarıcı, Marmara Üniversitesi, 2014. Doğrudan-yansıtıcı yaklaşıma dayalı öğretimin kimya öğretmen adaylarının bilimin doğası görüşlerine etkisi. (Doktora Tezi, Jüri Üyesi)
- Nilüfer Demirci, Marmara Üniversitesi, 2014. Sistemik yaratıcı problem çözme etkinliklerinin ilköğretim 7. sınıf öğrencilerinin ışık konusundaki kuramsal, deneysel ve günlük yaşam problemlerini çözmelerine etkisi. (Doktora Tezi, Jüri Üyesi)
- Filiz Gülhan, Marmara Üniversitesi, 2016. Fen-Teknoloji-Mühendislik-Matematik Entegrasyonunun (STEM) 5. sınıf öğrencilerinin algı, tutum, kavramsal anlama ve bilimsel yaratıcılıklarına etkisi. (Doktora Tezi, Jüri Üyesi)
- Ercan Tatlı, Marmara Üniversitesi, 2017. Bilim kurgu etkinliklerinin fen bilgisi öğretmen adaylarının bilimsel bilgiyi kavramalarına, bilimsel okuryazarlıklarına ve bilime karşı tutumlarına etkisi. (Doktora Tezi, Jüri Üyesi)
- Candan Cengiz, Marmara Üniversitesi, 2017. Bilimsel tartışma (Argümantasyon) öğretim becerilerinin gelişimi: Fen Bilgisi öğretmen adayları ile durum çalışmaları (Doktora Tezi, Jüri Üyesi)
- İlkay Buket Ataç Özdemir, Marmara Üniversitesi, 2017. Bilimin doğası ve bilimsel tartışma ile birleştirilmiş bilimin doğası eğitiminin Lise 10. sınıf öğrencilerinin bilimin doğası anlayışları, tartışma becerileri ve kimya dersine karşı tutumları üzerine etkilerinin karşılaştırılması. (Doktora Tezi, Jüri Üyesi)
- Berkan Avcı, Marmara Üniversitesi, 2017. Lego Mindstorms robotik projelerinin öğretmen adaylarının teknolojik pedagojik alan bilgisi, problem çözme becerileri ve bilimsel yaratıcılıkları üzerine etkisi. (Master Tezi, Jüri Üyesi)
- Zeynep Pehlivan, Bogazici University, 2018. Investigation of preservice mathematics teachers algebraic thinking through translations among multiple representations. (M.S. Thesis, Committee member)
- Selin Akgun, Bogazici University, 2018. University students' understanding of the nature of science. (M.A. Thesis, Committee member)
- Busra Acikel, Bogazici University, 2018. Exploring high school teachers' and students' experiences in the development of interactive exhibits on nanotechnology applications

integrating responsible research and innovation: Practical approaches, challenges, and benefits. M.S. Thesis, Committee member)

ADMINISTRATIVE DUTIES

Boğaziçi Üniversitesi, Eğitim Fakültesi, Fakülte Kurulu Doçent Temsilcisi: Mart 2018-devam ediyor.

Fakülte Akreditasyon ve Değerlendirme Kurulu Başkanı: Kasım 2016-devam ediyor.

Fakülte Akreditasyon ve Değerlendirme Kurulu Üyeliği: Aralık 2015-devam ediyor.

Boğaziçi Üniversitesi, Matematik ve Fen Bilimleri Eğitimi Bölümü, Bölüm Başkan Yardımcısı: Aralık 2013-Nisan 2018.

UYGAR Merkezleri Koordinasyon ve Değerlendirme Komisyonu Üyeliği: Aralık 2013-devam ediyor.

Okul Öncesi Birimi Yürütme Kurulu Üyeliği: Eylül, 2011-Eylül 2012.

Erasmus Coordinator for the Department of Mathematics and Science Education: September 2008 - present.

Dekanlık Eğilim Belirleme Komisyonu Üyeliği: Temmuz-Eylül, 2008, 2010; Ekim 2013-Şubat 2014; Ocak-Mart, 2016.

Student Advising (over 80 students): since Fall 2007.

AWARDS and HONORS

2017, Excellence in Research in Social Sciences Award presented by Bogazici University Foundation.

2009 to 2016 (each year), Academic Incentive Award, Bogazici University.

2009 to 2016 (each year), Academic Publication Award, Bogazici University Foundation.

2009 to 2016 (each year), International Academic Publication Incentive Award, The Scientific and Technological Research Council of Turkey.

2006, International Student Grant awarded by Office of International Education, The Ohio State University.

2000 to 2006, Full Scholarship awarded by Turkish Ministry of Education to pursue M.A. and Ph.D. in the USA.

RESEARCH PROJECTS

Researcher, *Okuldan topluma uzanan köprü: Nanoteknoloji kulüpleri*, funded by The Scientific and Technological Research Council of Turkey, Project No: 118B078, May 2018-May 2019.

Principle Investigator, *Students' conceptual progression of chemical reactions: A cross-age study*, funded by Bogazici University Research Project (BU-BAP), Project No: 12746, 2017-2019.

Researcher, *Kimyasal tepkimeler için bir görselleştirme sisteminin geliştirilmesi; Deneysel kanıtlara göre birbiriyile farklılaşan animasyon modellerinin kabul veya red edilmesi*, funded by The Scientific and Technological Research Council of Turkey, Project No: 115K025, May 2016-May 2018.

Researcher, *Including responsible research and innovation in cutting edge science and inquiry-based science education to improve teacher's ability of bridging learning environments (IRRESISTIBLE)*, funded by European Commission, The Seventh Framework Programme- Science in Society, Project No: 612367, November 2013-November 2016.

Researcher, *Hizmet öncesi öğretmenlerinin yansıtma becerilerini geliştirmek için özelleştirilmiş web tabanlı portfolyo sistemi tasarımı, geliştirilmesi ve değerlendirilmesi*, funded by The Scientific and Technological Research Council of Turkey, Project No: 111K523, March 2012- October 2013.

Principle Investigator, *Promoting preservice chemistry teachers' conceptual understandings of the associated solution chemistry concepts through model-based inquiry instruction*, funded by Bogazici University Research Project (BU-BAP), Project No: 6335, June 2011- October 2013.

Project Specialist, *Görsel yönden zenginleştirilmiş çoklu temsil ortamlarında argumantasyon yöntemiyle fen öğrenimi*, funded by The Scientific and Technological Research Council of Turkey, Project No: 109K566, April 2010-October 2012.

Principle Investigator, *Evaluation of high school students' conceptual understandings of the nature of solutions and solubility concepts at multiple representational levels*, funded by Bogazici University Research Project (BU-BAP), Project No: 09HD301P, 2009-2011.

Researcher, *Use of web-based portfolios as a tool for reflection in preservice teacher education*, funded by Bogazici University Research Project (BU-BAP), Project No: 09HD201P, 2009-2011.

PROFESSIONAL DEVELOPMENT

Workshops-Conferences Attended

World Stem Education Conference organized by **Istanbul Aydın University**, Istanbul, June 8, 2018

Workshop organized by **Istanbul University** on Changes and Transformations in Teacher Education (Öğretmen Yetiştirmede Değişim ve Dönüşümler), Istanbul, October 6-8, 2016.

Workshop organized by **Sibel Erduran** from University of Limerick, Ireland, on Scientific practices: What are they and how they can be promoted in school science?, Istanbul, December 22, 2014.

Presenters: Gürol Irzik, Zubeida Dagher, Sibel Erduran, Ebru Muğaloğlu, Deniz Sarıbaş, Ebru Kaya, Gaye Ceyhan.

Workshop presented by **John Gilbert** from University of Reading, UK on Visualization in Science and Science Education, Istanbul, Oct 15-16, 2008.

Workshop presented by **John Gilbert** from University of Reading, UK, on Visualization in Science and Science Education, Istanbul, May 16-18, 2007.

Workshop presented by **Jan Lundell** from University of Helsinki, Finland, on Chemistry ICT: Models, Visualization and Computational Chemistry in Teaching and Learning, Istanbul, April 2-6, 2007.

Certificates

Ohio Project Wild, Ohio Department of Natural Resources, Division of Wildlife, April, 2001.

Ohio Project Learning Tree, Ohio Department of Natural Resources, Division of Forestry, April, 2001.

Ohio Water Education Project, National Project Water Education for Teachers, May, 2001.

Affiliations

National Association for Research in Science Teaching (NARST).

American Educational Research Association (AERA).

European Science Education Research Association (ESERA).

The Association for Science Teacher Education (ASTE).

PROFESSIONAL SERVICE

Editorial Board member of *Boğaziçi Üniversitesi Eğitim Dergisi*, since 2015

Editorial Board member of *International Journal of Environmental and Science Education*, December 2013-June 2016

Reviewer for *Research in Science Education* (SSCI), since 2012 (13 manuscripts)

Reviewer for *Science Education* (SSCI), since 2011 (8 manuscripts)

Reviewer for *Chemistry Education Research and Practice* (SSCI), since 2012 (14 manuscripts)

Reviewer for *Journal of Teacher Education* (SSCI), since 2015 (4 manuscript)

Reviewer for *International Journal of Science Education* (SSCI), since 2017 (1 manuscript)

Reviewer for *International Journal of Environmental and Science Education*, since 2013 (3 manuscripts)

Reviewer for *Boğaziçi Üniversitesi Eğitim Dergisi*, since 2010 (2 manuscripts)

Reviewer for *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, since 2012 (1 manuscript)

Reviewer for Strand 1 proposals (Science Learning, Understanding, and Conceptual Change) for the annual meeting of National Association of Research in Science Teaching, 2004, 2008, 2010, 2014.

Reviewer for Strand of Teaching Science for the bi-annual meeting of European Science Education Research Association, 2009.

Reviewer for Strand of Student Learning proposals for the annual meeting of Association for Science Teacher Education, 2008.

PUBLIC SERVICE

Student Teacher at the Scarlet and Gray Ag Day, Columbus, OH, April 2001.

Science Fair Judge at Walnut Spring Middle School, Columbus, OH, March 2006.

Environmental Convention Judge at Özel Çevre Okulları, Istanbul, April 2008.