

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

GRUP ÜYELERİ



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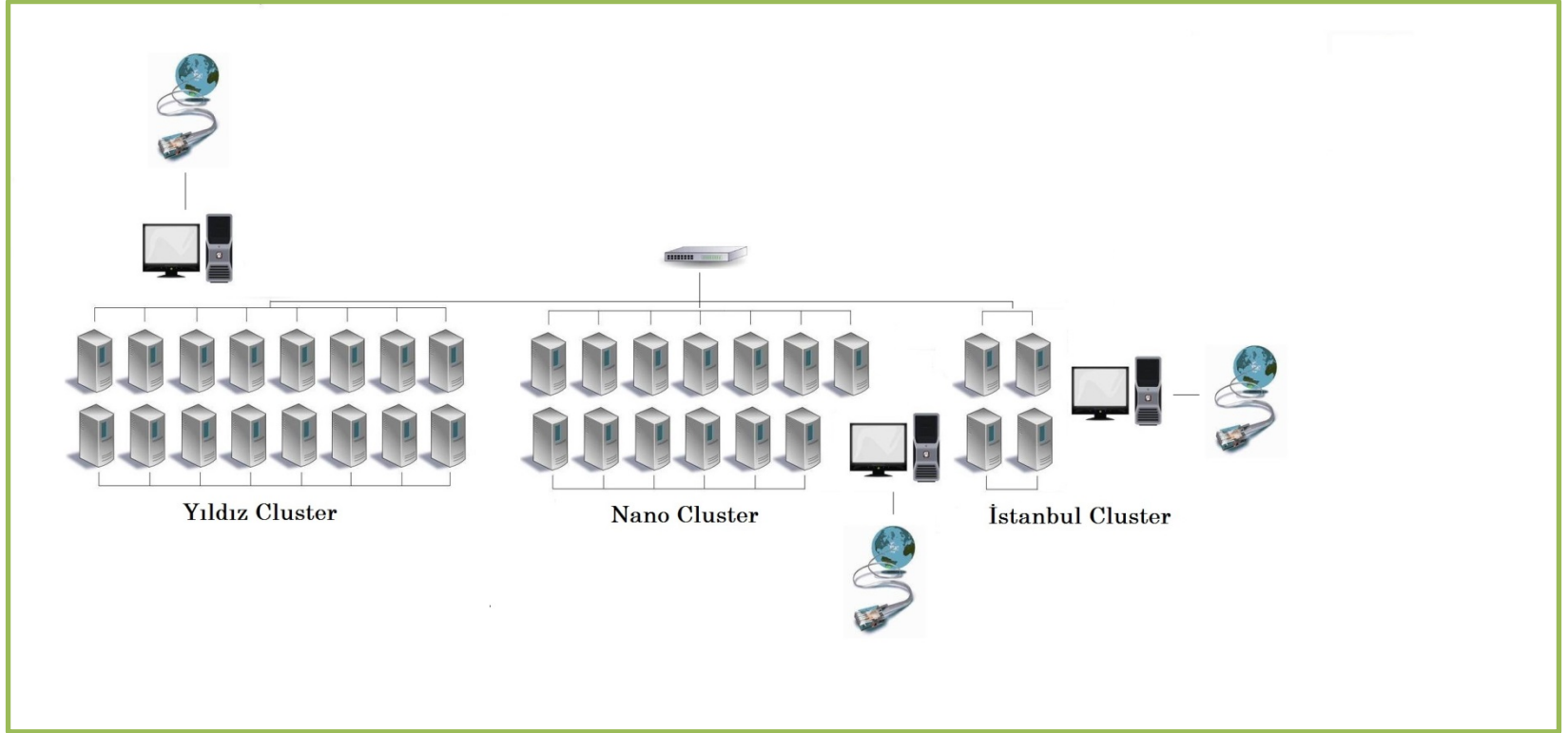
Yrd. Doç. Dr. Necati VARDAR (Araştırmacı)
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KARBON NANOTÜP SİMÜLASYON LABORATUVARI

CLUSTER ALTYAPIMIZ (1)



Laboratuvarımız da **Yıldız**, **Nano** ve **İstanbul** olmak üzere 3 ayrı cluster mimarisi bulunmaktadır.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

CLUSTER ALTYAPIMIZ (2)

Karbon Nanotüp Simülasyon Laboratuvarı üniversitemizce desteklenen projelerle kurulmuştur.

1) **G. Dereli**, Tek Duvarlı Karbon Nanotüplerin (TDKNT) Gerinim Altında Mekanik ve Elektronik Özelliklerinin Bilgisayar Simülasyonu,

YTÜ BAPK Proje No: 2009-01-01- KAP (2010-2012).

2) **G. Dereli**, Nanomalzemelerin Bilgisayar Simülasyonu,

YTÜ BAPK Proje No: 2010-01-01- DOP (2010-2012).

3) **G. Dereli**, Burkmanın Tek Duvarlı Karbon Nanotüpün (TDKNT) Fiziksel ve Elektronik Yapısına Etkisinin Bilgisayar Simülasyonu,

YTÜ BAPK Proje No: 29-01-01-YL02 (2009-2010).

4) **G. Dereli**, Karbon Nanotüplerin, Nano-Metal ve Alaşımlarının Bilgisayar Simülasyonu,

YTÜ BAPK Proje No: 24-01-01-04 (2004-2009).

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

LABORATUVARDAN KESİTLER



KARBON NANOTÜP SİMÜLASYON LABORATUVARI

KNT SİMÜLASYON LABORATUVARINDA YAPILAN DOKTORA & Y.LİSANS TEZLERİ

- 1) “Karbon Nanoşerit Simülasyonu” Çisem Elbasan, YTÜ, **Yüksek Lisans Tezi**, Ocak, 2013.
- 2) “Nanomalzemelerin Bilgisayar Simülasyonu”, Necati Vardar, YTÜ, **Doktora Tezi**, Aralık, 2012.
- 3) “Karbon Nanotüplerin Elektronik Yapısının Bilgisayar Simülasyonları”, Önder Eyecioğlu, YTÜ, **Doktora Tezi**, Temmuz, 2012.
- 4) “Burkmanın Karbon Nanotüplerin Fiziksel ve Elektronik Yapılarına Etkisi”, İbrahim Arı, YTÜ, **Yüksek Lisans Tezi**, Kasım, 2010.
- 5) “Eksenel Gerinim Altında Tek Duvarlı Karbon Nanotüplerin Elektronik Yapısı”, Gökmen Muş, YTÜ, **Yüksek Lisans Tezi**, Ocak, 2009.
- 6) “Karbon Nanotüplerin Elektronik Yapısına Sıcaklığın Etkisi”, Aijamal Murzakasumova, YTÜ, **Yüksek Lisans Tezi**, Ocak, 2009.
- 7) “Sıkı-Bağ Moleküler Dinamik Yöntemiyle Karbon Nanotüp Bilgisayar Simülasyonu”, Banu Süngü, YTÜ, **Doktora Tezi**, Haziran, 2006.
- 8) “Farklı Simetrik Yapılardaki Karbon Nanotüplerin Durum Yoğunluklarının Simülasyonu”, Necati Vardar, YTÜ, **Yüksek Lisans Tezi**, Haziran, 2006 .
- 9) “Nanoteknolojide Karbon Nanotüplerin Dayanıklılık Simülasyonları”, Ali Haydar Sevi, YTÜ, **Yüksek Lisans Tezi**, Temmuz, 2006.
- 10) “Bilgisayar Simülasyon Yöntemiyle Karbon Nanotüplerin Fiziksel Özelliklerinin İncelenmesi”, Önder Eyecioğlu, YTÜ, **Yüksek Lisans Tezi**, Temmuz, 2005.

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ULUSLARARASI YAYINLAR (1)

- 1) **G.Dereli**, B.Süngü Mısırlıoğlu, Ö. Eyecioğlu and Necati Vardar, “A New Lower Limit For The Bond Breaking Strains Of Defect-Free Carbon Nanotubes: Tight Binding MD Simulation Study”, **Computational Materials Science** **69**, 234-242 (2013).
- 2) **G.Dereli**, N.Vardar, and Ö. Eyecioğlu, "Effect of Strain on the Energy Band Gaps of (13,0) and (15,0) Carbon Nanotubes", Nanotechnology 2010: Advanced Materials, CNTs, Particles, Films and Composites - Technical Proceedings of the 2010 NSTI Nanotechnology Conference and Expo, **NSTI-Nanotech 2010**.
- 3) **G.Dereli**, B.Süngü, Ö. Eyecioğlu, “Vacancy Effect on the Thermal and Tensile Stability of (10,10) Single Walled Carbon Nanotube”, **Balkan Physics Letters** **18**, 181023 (2010).
- 4) B.Onat, M.Konuk, S.Durukanoğlu and **G. Dereli**, “Energetics and atomic relaxations of Cu nanowires: the effect of local strain and cross-sectional area”, **Nanotechnology** **20**, 075707 (2009).
- 5) **G. Dereli**, B.Süngü, “Temperature Dependence of the Tensile Properties of Single-Walled Carbon Nanotubes: O(N) Tight-Binding Molecular-Dynamics Simulations”, **Physical Review B** **75**, 184104 (2007)
This paper has been selected to be published in : **Vir. J. Nan. Sci. & Tech.** **15** , Issue 21 (2007) .
- 6) **G. Dereli**, B.Süngü, C. Özdoğan, “Thermal Stability of Metallic Single-Walled Carbon Nanotubes: an O(N) Tight-Binding Molecular Dynamics Simulation Study”, **Nanotechnology** **18**, 245704 (2007).

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ULUSLARARASI YAYINLAR (2)

7) **G. Dereli**, B. Süngü, Ö. Eyecioğlu, N. Vardar, (**Conference Paper**), “Temperature Effect on the Physical and Electronic Properties of Single Walled Carbon Nanotubes”, Sixth International Conference of the Balkan Physical Union, **American Institute of Physics Conference Proceedings**, **899**, 381-382, (2007).

8) **G. Dereli**, C. Özdoğan, “The Structural Stability and Energetics of Single-Walled Carbon Nanotubes under Uniaxial Strain”, **Physical Review B** **67**, 0354416 (2003).

This paper has been selected to be published in *Vir. J. Nan. Sci. & Tech.* 7, Issue 5 (2003).

9) **G. Dereli**, C. Özdoğan, “O(N) algorithms in TBMD simulations of the electronic structure of carbon nanotubes”, **Physical Review B** **67**, 0354415 (2003).

This paper has been selected to be published in *Vir. J. Nan. Sci. & Tech.* 7, Issue 5 (2003).

10) C. Özdoğan, **G. Dereli**, T. Çağın, “O(N) parallel tight binding molecular dynamics simulation of carbon nanotubes”, **Computer Physics Communications**, **148**, 188-205 (2002).

Prof. Dr. Gülay DERELİ'nin yayınlarına yapılan atıf sayısı 217 dir. (Ekim 2013 itibariyle)

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

Prof. Dr. Gülay DERELİ TARAFINDAN YAPILAN

ÇAĞRILI KONUŞMALAR (2003-2012) (1)

- 1) “Nanoteknoloji ve Quantum Kuramı”, Matematik Köyü Konferansları”, Şirince, Aydın, May 19, 2011.
- 2) “Strain Tunable Band Gaps of Carbon Nanotubes”, 2nd Greek-Turkish Conference on Statistical Mechanics and Dynamical Systems, 5-12 September 2010, Turunç/Marmaris-Symi/Rhodos.
- 3) “Gerinim Altındaki Karbon Nanotüplerin Elektronik Yapıları”, Istanbul Technical University, Department of Physics Seminar, March 20, 2009.
- 4) “Heating Carbon Nanotubes”, 24. International Physics Conference of the Turkish Physical Society, August 28-31, 2007, İnönü University, Malatya.
- 5) “Carbon Nanotubes” (Tutorial), 13. Statistical Physics Days, Boğaziçi University , İstanbul, July 8, 2006.
- 6) “Energy Gaps of Single Wall Carbon Nanotubes”, NANO-TR2, METU, Ankara, May 03-05, 2006.
- 7) “Carbon Nanotubes in Nanotechnology”, YTU Physics Day, İstanbul, November 25, 2005.
- 8) “How Strong are Single-Walled Carbon Nanotubes? Order (N), Tight Binding MD Simulations of Carbon Nanotubes”, 9. Liquid State Physics Symposium, Istanbul University, September 22-25, 2005.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

Prof. Dr. Gülay DERELİ TARAFINDAN YAPILAN

ÇAĞRILI KONUŞMALAR (2003-2012) (2)

- 9) “Carbon Nanotubes in Nanotechnology: Thermal and Structural Stability of SWCNTs” 23. International Physics Conference of the Turkish Physical Society, Muğla University, September 13-16, 2005.
- 10) Ce-Bit Information Technology Fair (Popular Lecture) : “Carbon Nanotube Simulations in Nanotechnology”, September 9, 2005.
- 11) “How Strong are CNTs?”, 12. Statistical Physics Days, Istanbul Technical University , June 30 - July 2, 2005.
- 12) “How Strong are Single-walled Carbon nanotubes? O(N) Tight Binding Molecular Dynamics Simulations of CNTs”, NANO-TR1, Bilkent University, Ankara, May 25-27, 2005.
- 13) “Simulations of Carbon Nanotubes”, Istanbul Technical University, Department of Physics Seminar, November 12, 2004.
- 14) “Tight-Binding Molecular Dynamics Simulations of Carbon Nanotubes”, 8. Liquid State Physics Symposium, Istanbul University, September 24-26, 2004.
- 15) “A study of solid-liquid phase transitions in metal alloys by molecular dynamics simulations”, 7. Liquid State Physics Symposium İstanbul University, September 19-21, 2003.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

YURTIÇİ KONFERANS SUNUMLARI (1)

- 1) **G.Dereli**, Ö.Eyecioglu and N.Vardar and Banu Süngü Mısırlıođlu, “Vacancy Dependent Band Gap Modifications of Carbon Nanotubes ”, **NanoTR 9**, June 24-28, 2013, Ataturk University, Erzurum.
- 2) **Gülay Dereli**, Banu Süngü Mısırlıođlu, Önder Eyecioglu, Necati Vardar, “How far can you stretch the seamless carbon nanotubes?”, **16. Liquid State Physics Symposium**, Dec. 21-22, 2012, Piri Reis University, Istanbul.
- 3) **Gülay Dereli** (Oral) , Banu Süngü Mısırlıođlu, Önder Eyecioglu, Necati Vardar, “Breaking Strains of Defect-Free Carbon Nanotubes: Tight Binding MD Simulation Study”, **19. Statistical Physics Days**, June28-30, 2012, Sabanci University, Istanbul.
- 4) **G.Dereli**, Ö.Eyecioglu (Oral), “Torsion Applied Carbon Nanotubes”, **18. Statistical Physics Days**, pp.28, June30-July 2, 2011, Sabanci University, Istanbul.
- 5) **G.Dereli**, N.Vardar (Oral), “Strain Applied Carbon Nanotubes at elevated temperatures”, **18. Statistical Physics Days**, pp.29, June30-July 2, 2011, Sabanci University, Istanbul.
- 6) **G.Dereli**, İbrahim Arı, N.Vardar and Önder Eyecioglu (Oral), “Speed up and efficiency of the algorithms used in simulations of (7,7) Carbon Nanotubes”, **2. Ulusal Yüksek Başarımli ve Grid Hesaplama Konferansı**, pp.95-97, July 13-15, 2010, Istanbul Technical University, Istanbul.
- 7) **G.Dereli**, Ö.Eyecioglu and N.Vardar (Oral), “Electronic Structure of Single Wall Carbon Nanotubes with Defects”, **17. Statistical Physics Days**, July 1-3, 2010, Sabanci University, Istanbul.
- 8) **G.Dereli**, N.Vardar and Ö.Eyecioglu (Oral), “Durability of Single Wall Carbon Nanotubes”, **17. Statistical Physics Days**, July 1-3, 2010, Sabanci University, Istanbul.

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YURTIÇİ KONFERANS SUNUMLARI (2)

- 9) **G.Dereli**, B. Sungu (Oral), “Diameter Effect on the Tensile Properties of Defected Armchair Single Walled Carbon Nanotubes”, **17. Statistical Physics Days**, July 1-3, 2010, Sabanci University, Istanbul.
- 10) **G.Dereli**, N.Vardar (Oral), “Band Gap Modification of (18,0) and (19,0) Zig-Zag Single Walled Carbon Nanotubes”, **Nabitek 2010**, June 20-23, 2010, Kaya Ramada Plaza, Istanbul.
- 11) **G.Dereli**, N.Vardar and Ö.Eyecioğlu (Poster), “MD Simulations of the Tensile Strength of (20,0) Single Walled Carbon Nanotubes”, **NanoTRVI**, June 15-18, 2010, Izmir Institute of Technology, Izmir.
- 12) **G.Dereli**, B.Sungu (Poster), “The Effect of Vacancies on the Mechanical Properties of (10,10) Single Walled Carbon Nanotubes”, **NanoTRVI**, June 15-18, 2010, Izmir Institute of Technology, Izmir.
- 13) **G.Dereli**, Ö.Eyecioğlu and N.Vardar (Oral), “Electronic Structure of Single Wall Carbon Nanotubes With Vacancy Defect”, **NanoTRVI**, June 15-18, 2010, Izmir Institute of Technology, Izmir.
- 14) **G.Dereli** and N.Vardar, "Band Gap Modification of Single Wall Carbon Nanotubes", **Workshop on Current Trends in Molecular Nanobiosciences**, 13-16 January , 2010, Bilkent University, Bilkent, Ankara.
- 15) **Gülay Dereli** , Necati Vardar , Önder Eyecioğlu(Oral), “Single Walled Carbon Nanotubes under Uniaxial Strain”, **13. Liquid State Physics Symposium**, Oct. 27-29, 2009, Piri Reis University, İstanbul, Turkey.
- 16) **Gülay Dereli**, Banu Süngü, “Low Temperature Thermal Behavior of Single Walled Carbon Nanotubes” **16. Statistical Physics Days**, June 25-27 2009, Koç University ,İstanbul.
- 17) **Gülay Dereli**, Necati Vardar and Önder Eyecioğlu, “Simulations of Strain on the Mechanical and Electronic Properties of Semiconducting SWCNTs” **16. Statistical Physics Days**, June 25-27 2009, Koç University, İstanbul.

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YURTIÇİ KONFERANS SUNUMLARI (3)

- 18) Gülay Dereli**, Önder Eyecioğlu and Necati Vardar, “Effect of Strain on the Energy Band Gaps of (12,0) and (14,0) Carbon Nanotubes” **16. Statistical Physics Days**, June 25-27 2009, Koç University, İstanbul.
- 19) Gülay Dereli**, Banu Süngü, “Size Effect on the Thermal Expansion of Single Walled Carbon Nanotubes”, **Nano TR V**, June 8-12, 2009, Anadolu University, Eskişehir.
- 20) Gülay Dereli**, Necati Vardar and Önder Eyecioğlu, “Effect of Strain on the Energy Band Gaps of (19,0) and (20,0) SWCNTs”, **Nano TR V**, June 8-12, 2009, Anadolu University, Eskişehir.
- 21) Gülay Dereli**, Önder Eyecioğlu and Necati Vardar, “Effect of Strain on the Energy Band Gaps of (13,0) and (15,0) Carbon Nanotubes”, **Nano TR V**, June 8-12, 2009, Anadolu University, Eskişehir.
- 22) Gülay Dereli**, Necati Vardar, Önder Eyecioğlu (Oral), “Electronic Properties of zig-zag single walled Carbon Nanotubes under Uniaxial strain”, **Workshop on Nanoelectronics and Nanophotonics**, Jan26-28, 2009, Bilkent University, Ankara.
- 23) Gülay Dereli**, Önder Eyecioğlu, Necati Vardar (oral), “Band Gap Modification of Carbon Nanotubes Under Tension”, **12. Liquid State Physics Symposium**, Oct 31-Nov 2, 2008, İstanbul University , İstanbul.
- 24) G. Dereli**, B. Süngü (oral), “A Molecular Dynamics Study of the Young Modulus of Single-Walled Carbon Nanotubes with Respect to Tube Radius”, **12. Liquid State Physics Symposium**, Oct 31-Nov 2, 2008, İstanbul University , İstanbul.
- 25) G. Dereli**, B. Süngü (oral), “Chirality Dependence of the Tensile Properties of Carbon Nanotubes”, **15. Statistical Physics Days**, June 19-21, 2008 Koç University , İstanbul.
- 26) G.Dereli**, N.Vardar (oral), “Temperature Dependence of the Electronic Properties of Carbon Nanotubes”, **15. Statistical Physics Days**, June 19-21, 2008 Koç University ,İstanbul.

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YURTIÇİ KONFERANS SUNUMLARI (4)

- 27) **G.Dereli**, Ö.Eyecioglu (oral), “Electronic Structure of Single-Walled Carbon Nanotubes Under Uniaxial Strain”, **15. Statistical Physics Days**, June 19-21, 2008, Koç University , İstanbul.
- 28) B.Onat,M.Konuk,S.Durukanoglu,**G.Dereli** (Invited Talk)”AtomisticProcess on Cu Nanowires”, **15. Statistical Physics Days**, , June 19-21, 2008, Koç University , İstanbul.
- 29) **G. Dereli**, B. Söngü (oral), “High Temperature Chirality Effect on the Mechanical Properties of Single-Walled Carbon Nanotubes”, **Nano TR IV**, June 9-13, 2008, İstanbul Technical University, İstanbul.
- 30) **G.Dereli**, Ö.Eyecioglu (poster), “Effects of Strain on the Energy Band Gaps of Carbon Nanotubes”, **Nano TR IV.**, June 9-13, 2008, İstanbul Technical University, İstanbul.
- 31) M.Konuk, B.Onat,S.Durukanoglu,**G.Dereli**(Oral)”AtomisticProcesses and Relaxations on Cu Nanowires”, **Nano TR IV.**, June 9-13, 2008, İstanbul Technical University, İstanbul.
- 32) **G.Dereli** (oral), “Thermal properties of Carbon Nanotubes”, **Chemical Physics Conference VIII**, April 24-25 2008, İstanbul Technical University, İstanbul.
- 33) **Gülay Dereli** , Banu Söngü (Oral), “High Temperature Tensile Properties of Single Walled Carbon Nanotubes”, **Nano TR III**, 11-14 June 2007, Bilkent University, Ankara.
- 34) **Gülay Dereli**, Necati Vardar, Önder Eyecioglu (Poster), “High Temperature Band Gaps of Semiconducting (10,0) Single-Walled Carbon Nanotubes” **Nano TR III**, 11-14 June 2007, Bilkent University, Ankara, Turkey.
- 35) Berk Onat, Sondan Durukanoglu, **Gülay Dereli** (Oral), “Structure of Cu Nanowires”, **Nano TR III**, 11-14 June 2007, Bilkent University, Ankara, Turkey.

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YURTIÇİ KONFERANS SUNUMLARI (5)

- 36) Mine Konuk, Berk Onat, Sondan Durukanoglu, **Gülay Dereli** (Poster), “Energetics of Cu Nanowires”, **Nano TR III**, 11-14 June 2007, Bilkent University, Ankara, Turkey.
- 37) **Gülay Dereli** and Banu Süngü(Oral), “Temperature Dependence of the Tensile Properties of Carbon Nanotubes”, **11. Liquid State Physics Symposium**, Sept 27-30 2007, İstanbul University, İstanbul, Turkey.
- 38) **Gülay Dereli** , Necati Vardar , Önder Eyecioğlu(Oral), “Temperature Dependence of the Energy Band Gaps of Carbon Nanotubes”, **11. Liquid State Physics Symposium**, Sept. 27-30 2007, İstanbul University, İstanbul, Turkey.
- 39) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (Oral), “Band Gaps of (10,0) Carbon Nanotubes”, **14. Statistical Physics Days**, Bosphorus University, İstanbul, June 21-23, 2007, Turkey.
- 40) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (Oral) , “Temperature Effect on the Electronic Properties of Single Walled Carbon Nanotubes , **10. Liquid State Physics Symposium** İstanbul University , İstanbul, Sept 28 - Oct 01 , 2006.
- 41) **G.Dereli**, B.Süngü (oral) , “Temperature Effect in Streching the Single Walled Carbon Nanotubes”, **10. Liquid State Physics Symposium** , İstanbul University, 28 Eylül-01 Ekim, 2006.
- 42) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (oral), “Electronic Properties of Single Wall Carbon Nanotubes with Different Chiral Symmetries”, **13. Statistical Physics Days**, Bosphorus University , İstanbul, July 06-08, 2006.
- 43) **G.Dereli**, B.Süngü (oral), “Tight Binding Molecular Dynamic Simulation of Single Walled Carbon Nanotubes Under Uniaxial Strain”, **13. Statistical Physics Days**, Bosphorus University, İstanbul, July 06-08 , 2006.
- 44) **G.Dereli** (Tutorial) “Carbon Nanotubes”, **13. Statistical Physics Days**, Bosphorus University, İstanbul, July 8, 2006.

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YURTIÇİ KONFERANS SUNUMLARI (6)

- 45) **G. Dereli** (oral), “Energy Gaps of Single Wall Carbon Nanotubes”, **NANOTR2**, METU, Ankara, May 03-05, 2006.
- 46) **G.Dereli**, Ö.Eyecioglu, N.Vardar, İ.Arı (Poster), “Carbon Nanotube Simulations in Parallel Environments”, **NANOTR2**, METU, Ankara, May 03-05, 2006.
- 47) **G.Dereli**, B.Süngü (Poster), “Mechanical Properties of Single Walled Carbon Nanotubes”, **NANOTR2**, METU, Ankara, May 03-05 , 2006.
- 48) **G.Dereli** (Oral), “How Strong are Single-Walled Carbon Nanotubes? Order (N), Tight Binding MD Simulations of Carbon Nanotubes”, **9. Liquid State Physics Symposium** , İstanbul University , Sept 22-25 , 2005.
- 49) **G.Dereli** (Oral), “How Strong are Carbon nanotubes?”, **12. Statistical Physics Days**, İstanbul Technical University, June 30- July 2, 2005.
- 50) **G.Dereli**, C.Özdoğan,B.Süngü, Ö.Eyecioglu(Oral), “How Strong are Single-walled Carbon nanotubes? O(N) Tight Binding Molecular Dynamics Simulations of CNTs”, **NANOTR1**, Bilkent University, Ankara, May 25-27 , 2005.
- 51) **G.Dereli** (Oral), “Tight-Binding Molecular Dynamics Simulations of Carbon Nanotubes”, **8. Liquid State Physics Symposium** , İstanbul University, Sept. 24-26 , 2004.
- 52) **G.Dereli**, B.Süngü, C.Özdoğan (oral), “Thermal Properties of Carbon Nanotubes using Tight-binding Molecular Dynamics Technique”, **22. Turkish Physical Society Meeting** , Bodrum, Sept 14-17 , 2004.
- 53) **G.Dereli**, B.Süngü, C.Özdoğan (oral), “Thermal Study of (10,10) Carbon Nanotubes using Tight-Binding Molecular Dynamics Simulations”, **11. Statistical Physics Days**, pp.36-37, Istanbul Technical University, June 24-26 , 2004.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

YURTIÇİ KONFERANS SUNUMLARI (7)

- 54) G.Dereli**, Ö.Eyecioğlu, C.Özdoğan (oral), “Order (N) Tight-Binding Molecular Dynamics Simulations of Carbon Nanotubes of Various Chiralities”, **11. Statistical Physics Days**, p.38, Istanbul Technical University , June 24-26 , 2004.
- 55) G.Dereli** (Oral), "MD simulations of Solid-Liquid phase transitions of metal alloys", **7. Liquid State Physics Symposium** , İstanbul University, Sept 19-21 , 2003.
- 56) G. Dereli**, C. Özdoğan (oral), “O(N), parallel,Tigth-binding Molecular Dynamics Simulations”, **8. Condensed Matter Physics: Ankara Seminars**, Bilkent University, Nov. 2001.
- 57) G. Dereli**, C. Özdoğan (oral), “Mechanical and Electronic Properties of Carbon Nanotubes: An order-N, Parallel, Tight Binding Molecular Dynamics Study”, **8. Statistical Physics Days**, p.36-37, Istanbul Technical University, July 2001.
- 58) G. Dereli**, C. Özdoğan, T. Çağın (oral), “Order(N) Parallel Tight Binding Molecular Dynamics: Application to Carbon Nanotubes”, **7. Statistical Physics Days**, Istanbul Technical University, July 2000.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

YURTDIŞI KONFERANS SUNUMLARI (1)

- 1) **G.Dereli**, N.Vardar, Ö.Eyecioğlu, B.S.Mısırlıoğlu, “Durability simulations of (n,0) zigzag SWCNTs by Tight-Binding Molecular Dynamics”, **International Conference of the Turkish Physical Society**, pp 192, September 2-5, 2013 Istanbul University, Turkey.
- 2) **G.Dereli**, B.Sungu Mısırlıoğlu, “Strain Energy of the (12,0) and (14,0) Carbon Nanotubes ”**30th International Conference of the Turkish Physical Society**, pp 183, September 2-5, 2013 Istanbul University, Turkey.
- 3) **G.Dereli**, B.Sungu Mısırlıoğlu(Oral), “Physical Behavior of Strained Carbon Nanotubes”**29th International Conference of the Turkish Physical Society**, pp 224, September 5-8, 2012 Bodrum, Turkey.
- 4) **G.Dereli**, N.Vardar (Poster), “Electronic Behavior of Strained Carbon Nanotubes”,**28th International Conference of the Turkish Physical Society**, pp.808-809, September 6-9, 2011, Bodrum, Turkey.
- 5) **G.Dereli**, B.Sungu Mısırlıoğlu, Ö. Eyecioğlu (Oral), “Tensile Stability of Topologically Defective Armchaired and Zig-zag Carbon Nanotubes”, **28th International Conference of the Turkish Physical Society**, pp.267, September 6-9, 2011 Bodrum, Turkey.
- 6) **G.Dereli** (invited talk), “Strain Tunable Band Gaps of Carbon Nanotubes”, 2nd Greek-Turkish Conference on Statistical Mechanics and Dynamical Systems, 5-12 September 2010, [Turunc/Marmaris-Symi/Rhodos](#) .
- 7) **G.Dereli**, B.Sungu, Ö. Eyecioğlu (Oral), “The Effect of Vacancy Density on the Fracture of an Armchaired Carbon Nanotube”, **27th International Conference of the Turkish Physical Society**, September 13-17, 2010 Istanbul, Turkey.
- 8) **G.Dereli**, İ.Arı, Ö.Eyecioğlu and N.Vardar (Oral), “Performance Analysis of parallel algorithms used in Simulation of Single Wall Carbon Nanotubes at two Different Temperatures”, **27th International Conference of the Turkish Physical Society**, September 13-17, 2010 Istanbul, Turkey.

KARBON NANOTÜP SİMÜLASYON LABORATUVARI

YURTDIŞI KONFERANS SUNUMLARI (2)

- 9) **G.Dereli**, N.Vardar Ö.Eyecioğlu, (Oral), “Effect of Strain and Temperature on the Fracture Behavior of a Zig-Zag Single Wall Carbon Nanotube”, **27th International Conference of the Turkish Physical Society**, September 13-17, 2010 Istanbul, Turkey.
- 10) **G.Dereli**, N.Vardar, and Ö. Eyecioğlu, "Effect of Strain on the Energy Band Gaps of (13,0) and (15,0) Carbon Nanotubes", **TechConnect World Conference & Expo 2010**, 21-25 June , 2010, Anaheim Convention Center, Anaheim, CA, USA.
- 11) **G. Dereli**, B. Süngü (oral), “Vacancy effect on the thermal stability of (10,10) Single Walled Carbon Nanotubes”, **26th International Conference of the Turkish Physical Society**, September 24-27, 2009 Bodrum,Turkey.
- 12) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (Oral), “Bandgap changes of Single Walled Carbon Nanotubes under uniaxial strain”, **26th International Conference of the Turkish Physical Society**, September 24-27 , 2009 Bodrum,Turkey.
- 13) **G.Dereli**, N.Vardar, Ö.Eyecioğlu (Oral), “Tight-binding Molecular Dynamics Simulations of (18,0),(19,0) and (20,0) Single Walled Carbon Nanotubes under uniaxial strain”, **26th International Conference of the Turkish Physical Society**, September 24-27 , 2009 Bodrum,Turkey.
- 14) **G. Dereli**, N. Vardar, O. Eyecioğlu (poster), “Simulations of Strain on the Electronic Properties of Semiconducting SWCNTs: Order N, paralel, Tight- Binding Molecular Dynamics Technique”, **7th General Conference of Balkan Physics Union**, September 09-13 2009, Alexandroupolis, Greece.
- 15) **G. Dereli**, N. Vardar, O. Eyecioğlu (Oral),”Strained (19,0) and (20,0) SWCNTs:Mechanical and Electronic Properties”, **NANOMATS09 “International Conference on Nanomaterials and Nanosystems”**, August 10-13 , 2009, İstanbul Technical University, İstanbul.

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YURTDIŞI KONFERANS SUNUMLARI (3)

- 16) G.Dereli, Ö.Eyecioğlu, N.Vardar (poster), “Effect of Strain on the Single-Wall Carbon Nanotubes”, NANOMATS09 “International Conference on Nanomaterials and Nanosystems”, August 10-13 , 2009, İstanbul Technical University, İstanbul.
- 17) S.Durukanoglu, B.Onat, M.Konuk ,**G.Dereli**(Oral)” Molecular Static Calculations of Cu Nanowires:The effect of Local Strain and Cross-sectional Area “ **100th Statistical Mechanics Conference**, December 13-18, 2008, Rutgers, The State University of New Jersey, Hill Center, New Jersey, USA.
- 18) **G. Dereli**, B. Süngü (oral), “Tensile Strength of Thermally Deformed Carbon Nanotubes”, **25th International Conference of the Turkish Physical Society**, August 25-29 2008, Bodrum,Turkey.
- 19) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (Oral), “Strain Effects on the Energy Band Gaps of Carbon Nanotubes”, **25th International Conference of the Turkish Physical Society**, August 25-29 2008, Bodrum,Turkey.
- 20) **Gülay Dereli** (Invited Talk), “Heating Carbon Nanotubes”, **24th International Conference of the Turkish Physical Society**, August 28-31 2007, İnönü University, Malatya, Turkey.
- 21) **G. Dereli (invited)** ,Temperature Effect on the Mechanical and Electronic Properties of Single-Walled Carbon Nanotubes, **6th International Conference of the Balkan Physical Union**, August 22-26, 2006, İstanbul, Turkey.
- 22) **G.Dereli**, Ö.Eyecioğlu, N.Vardar (poster), “Semiconducting Single-Wall Carbon Nanotubes”, (Poster), **NANOMAT06 International Workshop on Nanostructured Materials** , June 21-23 , 2006 Antalya, Turkey .
- 23) **G. Dereli (oral)**, “Carbon Nanotubes in Nanotechnology: Thermal and Structural Stability of SWCNTs”, **World Year of Physics 2005, Turkish Physical Society 23. International Physics Congress**, Sept. 13-16, 2005, Muğla Uni., Turkey.

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- 24) **G.Dereli**, B.Süngü, C.Özdoğan, “Effects of Temperature on the Tensile Properties of Single Walled Carbon Nanotubes”, (Poster), **World Year of Physics 2005, Turkish Physical Society 23. International Physics Congress**, Sept. 13-16, 2005, Muğla Uni., Turkey.
- 25) C. Özdoğan, **G. Dereli (oral)**, “Order N, parallel tight binding molecular dynamics: application to carbon nanotubes”, **Quantum Simulations of Complex Many Body Systems: From Theory to Algorithms**, March 2002, Amsterdam, Netherlands.
- 26) **G. Dereli**, C. Özdoğan, T. Çağın (**oral**) , “ An O(N) parallel tight binding MD simulation study of carbon nanotubes: structural stability, energetics and electronic properties at elevated temperatures”, **9th Foresight Conference on Molecular Nanotechnology**, November 2001, Santa Clara, California, USA.
- 27) C. Özdoğan, **G. Dereli (Oral)**, “ Order-N parallel tight binding molecular dynamics: application to carbon nanotubes”, **International Conference on Mathematical Modelling and Scientific Computing**, April 2001, METU, Ankara.
- 28) C. Özdoğan, **G. Dereli**, T. Çağın (Oral), “The influence of uniaxial, radial and torsial deformations on the electronic properties of nanotubes: An O(N) TBMD study”, Paper given to **The 8th Foresight Conference on Molecular Nanotechnology**, November 3-5, 2000, Bethesda, Maryland, USA.