



EMRE S. TASCI

emre.tasci@ehu.es

<http://www.emresururi.com>

Fisica de la Materia Condensada, Facultad de Ciencia y Tecnologia
Universidad del Pais Vasco
Apartado 644
48080 Bilbao, Spain

PERSONAL INFORMATION

Place & Date of Birth : Istanbul, 1977.

Marital Status : Married, with one child.

EDUCATION

B.S. : Istanbul Technical University, Physics Engineering Department (2000).

M.S. : Middle East Technical University, Physics Department (2002).

Ph.D. : Middle East Technical University, Physics Department (2007).

Post-Doctoral Research:

TU Delft, Materials Science and Engineering Dept. (11/2007 - 11/2009)

UPV, Condensed Matter Physics Dept. Bilbao Crystallographic Server

[\[http://www.cryst.ehu.es\]](http://www.cryst.ehu.es) (12/2009 - ongoing)

LANGUAGES

English : Fluent (TOEFL 270/300, KPDS 95/100).

Computing Languages

Visual and Standard C++, MPI2 (via MPICH Implementation), Fortran, Perl, PHP, MySQL, HTML/XML.

Also coded simple applications and scripts in various other languages (ie. Java, Tcl/Tk, Python, etc..) when called for. Can adapt and debug new languages and methods easily.

ACADEMIC

B.S. :

Under the advisorship of Prof. Nese Ozdemir, in the area of quantum field theory, "Creation of Particles in Vacuum with Moving Boundary Conditions" titled completion thesis.

M.S. :

Under the advisorship of Prof. Sakir Erkoç, in the area of molecular simulations, "Simulation of Casimir Effect for Various Geometries" titled M.S. thesis.

Ph.D. :

Under the advisorship of Prof. Sakir Erkoç, in the area of molecular simulations, "Generation and Simulations of Nanostructures of Cage Structures" titled Ph.D. thesis (*METU Thesis of the year*).

Past Research Areas:

Molecular Mechanics and Molecular Dynamics Simulations of nanotubes, nanotoroids, nanogears and nanojunctions. Parallelization of optimization and simulation applications (with Prof. Sakir Erkoç, METU). Animations of a nanogear simulation study can be downloaded from <http://www.emresururi.com/videos/>.

Transformation Toughening and DataMining; Discovery of new stable compounds via Materials Informatics and ab-initio calculations (with Assoc. Prof. Marcel Sluiter, TUDelft).

Current Research Areas:

Group theory applications to solid state; development of new tools for the Bilbao Crystallographic Server (<http://www.cryst.ehu.es>); phase transformations.

References' information available upon request.

SEMI – ACADEMIC

2000 – 2007 Research Assistant at Physics Dept., METU

2002 – 2007 Department's Computer Coordinator, METU

2010 – System Administrator of the Bilbao Crystallographic Server, UPV

PAPERS PUBLISHED IN INTERNATIONAL REFEREED JOURNALS

E.S. Tasci and S. Erkoç, "Simulation of the Casimir-Polder Effect for Various Geometries", Int. J. Mod. Phys. C **13**(7) (2002) 979-985.

[DOI : [10.1142/S0129183102003723](https://doi.org/10.1142/S0129183102003723)]

S. Erkoç, O.B. Malcıoğlu, and E. Tasci, "Structural and electronic properties of single-wall GaN nanotubes: Semi-empirical SCF-MO calculations", J. Mol. Struct. (Theochem) **674** (2004) 1-5.

[DOI : [10.1016/j.theochem.2003.12.020](https://doi.org/10.1016/j.theochem.2003.12.020)]

E. Yazgan, E. Tasci, and S. Erkoç, "An Algorithm to Generate Toroidal and Helical Cage Structures Using Pentagons, Hexagons and Heptagons", Int. J. Mod. Phys. C **15**(2) (2004) 267-278.

[DOI : [10.1142/S0129183104005656](https://doi.org/10.1142/S0129183104005656)]

E. Yazgan, E. Tasci, O.B. Malcıoğlu, and S. Erkoç, "Electronic Properties of Carbon Nanotoroidal Structures", J. Mol. Struct. (Theochem) **681** 231-234 (2004).

[DOI : [10.1016/j.theochem.2004.05.029](https://doi.org/10.1016/j.theochem.2004.05.029)]

E. Tasci, E. Yazgan, O.B. Malcıoğlu, and S. Erkoç, "Stability of Carbon Nanotubes Under Heat Treatment: Molecular-Dynamics Simulations", Fullerenes, Nanotubes, and Carbon Nanostruct. **13**(2) (2005) 147-154.

[DOI : [10.1081/FST-200050695](https://doi.org/10.1081/FST-200050695)]

E. Tasci, O.B. Malcıoğlu, and S. Erkoç, "Junction Formation in Crossed Nanotubes Under Pressure: Molecular-Dynamics Simulations", Int. J. Mod. Phys. C **16**(9) (2005) 1371-1377.

[DOI : [10.1142/S0129183105007960](https://doi.org/10.1142/S0129183105007960)]

O.B. Malcıoğlu, E. Tasci, and S. Erkoç, "Structural and molecular electronic properties of BN ring doped single-wall carbon nanotubes", Physica E **28**(3) (2005) 296-308.

[DOI : [10.1016/j.physe.2005.03.023](https://doi.org/10.1016/j.physe.2005.03.023)]

O.B. Malcıoğlu, E. Tasci, and S. Erkoç, "Single Wall Bamboo Shaped Carbon Nanotube: A Molecular Dynamics and Electronic Study", Int. J. Mod. Phys. C **17**(2) (2006) 187-196.

[DOI : [10.1142/S012918310600887X](https://doi.org/10.1142/S012918310600887X)]

E. Tasci and S. Erkoc, "An algorithm for constructing various kinds of nanojunctions using zigzag and armchair nanotubes", J. Nanosci. Nanotech. **7**(4-5) (2007) 1653-1661.

[DOI: [10.1166/jnn.2007.450](https://doi.org/10.1166/jnn.2007.450)]

E. Tasci, O.B. Malcioglu, and S. Erkoc, "Structural properties of carbon nanogears", Fullerenes, Nanotubes, and Carbon Nanostruct. **16**(1) (2008) 30-39.

[DOI: [10.1080/15363830701779307](https://doi.org/10.1080/15363830701779307)]

E. Tasci and S. Erkoc, "Molecular Mechanics and Molecular Dynamics Simulations of Carbon Based Nanogears", J. Comput. Theor. Nanos. **6** 921-925 (2009).

[DOI: [10.1166/jctn.2009.1126](https://doi.org/10.1166/jctn.2009.1126)]

E.S. Tasci, M.H.F. Sluiter, A. Pasturel, P. Villars, "Liquid structure as a guide for phase stability in the solid state: discovery of a stable compound in the Au-Si alloy system", Acta Mater. **58**(2) 449-456 (2010).

[DOI: [10.1016/j.actamat.2009.09.023](https://doi.org/10.1016/j.actamat.2009.09.023)]

A. Pasturel, E.S. Tasci, M.H.F. Sluiter, N. Jakse, "Structural and dynamic evolution in liquid Au-Si eutectic alloy by *ab-initio* molecular dynamics", Phys. Rev. B **81** 140202 (2010).

[DOI: [10.1103/PhysRevB.81.140202](https://doi.org/10.1103/PhysRevB.81.140202)]

E.S. Tasci, M.H.F. Sluiter, A. Pasturel, N. Jakse, "Existence of a stable compound in the Au-Ge alloy system", Phys. Rev. B **81** 172202 (2010).

[DOI: [10.1103/PhysRevB.81.172202](https://doi.org/10.1103/PhysRevB.81.172202)]

C. Capillas, E.S. Tasci, G. de la Flor, D. Orobengoa, J.M. Perez-Mato, M.I. Aroyo, "A new computer tool at the Bilbao Crystallographic Server to detect and characterize pseudosymmetry", Z. Kristallogr. (2010) (Accepted).

PROCEEDINGS PRESENTED IN INTERNATIONAL MEETINGS

E. Tasci, O.B. Malcioglu, S. Erkoc, "Simulation of carbon nanotube junction formation", NATO-ASI, Nanoengineered Nanofibrous Materials, Antalya, September 1-12, 2003. (Poster). Proceeding: NATO Science Series II/169, Eds. S. Guceri, Y.G. Gogotsi, and V. Kuznetsov, 2004 Kluwer, p. 237.

E. Yazgan, E. Tasci, O.B. Malcioglu, S. Erkoc, "Stability of carbon nanotube", NATO-ASI, Nanoengineered Nanofibrous Materials, Antalya, September 1-12, 2003. (Poster). Proceeding: NATO Science Series II/169, Eds. S. Guceri, Y.G. Gogotsi, and V. Kuznetsov, 2004 Kluwer, p. 241.

E. Tasci, O.B. Malcioglu, S. Erkoc, "Encountering the same old solid mechanics in the realm of nano dimensions: an investigation of the interaction between two nanogears" (poster), NANOMAT 2006 International Workshop on Nanostructured Materials, June 21-23, 2006, Antalya, Book of Abstracts p. 212.

E. Tasci, M.H.F. Sluiter, "Inference from Various Material Properties Using Mutual Information and Clustering Methods" MITS 2008, International Symposium on Materials Database, July 17-18, 2008, Tsukuba, Japan.

E. Tasci, M.H.F. Sluiter, "Proposal of the XML Specification as a Standard for Materials Database Query Submission and Result Retrieval" MITS 2008, International Symposium on Materials Database, July 17-18, 2008, Tsukuba, Japan.

M.H.F. Sluiter, E. Tasci, “Finding Materials for Transformation Toughening through Datamining” MITS 2008, International Symposium on Materials Database, July 17-18, 2008, Tsukuba, Japan.

M.H.F. Sluiter, E.S. Tasci, “Liquid Structure as A Guide for Phase Stability in the Solid State: Prediction of a Stable Compound in the Au-Si Alloys System” ACCMS-5, The 5th Conference of the Asian Consortium on Computational Materials Science, September 7-11, 2009, Hanoi, Vietnam.

M.H.F. Sluiter, D. Simonovic, E.S. Tasci, “Materials Database for the Computational Materials Scientist” AMDS 2010, The 2nd Asian Materials Database Symposium, March 10-14, 2010, Sanya, China.

PROCEEDINGS PRESENTED IN NATIONAL MEETINGS

E. Tasci, S. Erkok, “Calculation of the Casimir-Polder effect between various nanosystems”, European Union 6. Frame Program: Nanotechnology, Intelligent Devices and New Production Processes Workshop, Bilkent University, Ankara, July 12, 2002 (Poster).

E. Yazgan, E. Tasci, O.B. Malcioglu, S. Erkok, “Theoretical Investigation of Carbon Nanotoroid Structures”, Turkish Physics Association 22. Physics Congress (TFD22), Bodrum, September 14-17, 2004 (Poster).

E. Tasci, O.B. Malcioglu, S. Erkok, “Modelling and Simulation of Carbon Nano Gears”, Nano-TR-I, Nanoscience and Nanotechnology 2005, Bilkent University, Ankara 25-27 May 2005 (Poster).

E. Tasci, M.H.F. Sluiter, “Materials Informatics for Transformation Toughening”, Physics@FOM 2009, Veldhoven, January 20-21, 2009 (Poster).

S. Neelakantan, E. Tasci, P.E.J. Rivera Diaz del Castillo, S. van der Zwaag, “Martensite transformation prediction by combining electron theory with thermodynamics”, Physics@FOM 2009, Veldhoven, January 20-21, 2009 (Poster).

G. de la Flor, E. Tasci, D. Orobengoa, J.M. Perez-Mato, M.I. Aroyo, “Crystallography Online by the Bilbao Crystallographic Server”, II. Jornadas de Investigacion de la Facultad de Ciencias y Tecnologia, Leioa, March 15-17, 2010 (Poster).

CONTRIBUTION TO BOOKS

S. Erkok, O.B. Malcioglu, E. Tasci, “Thermal Stability of Carbon Nanosystems: Molecular-Dynamics Simulations”, in “Nanomaterials: Design and Simulation”, Eds. P.B. Balbuena, J.M. Seminario, Elsevier 2006.

ISBN : 0444528261

<http://books.google.com/books?id=2C2URGmaFkMC&printsec=frontcover>

COMPUTER APPLICATIONS

[I have been a little bit out-of-practice with the information contained in this paragraph since 2007] Fluent in MS-Windows operating systems and working environment (experience as the computer coordinator of the department), MS-Office applications, Adobe Photoshop, various mathematical computing and formula editing applications (Design Science MathType, LaTeX and PDF library), Mathematics Software (MathWorks Matlab, Wolfram Mathematica, Waterloo Maple, MathSoft MathCAD), video editing and compression software, molecular simulation, modeling and evaluation software (Hypercube HyperChem, TINKER, RasTop).

Worked on the parallelization of molecular mechanics and optimization software using MPICH for Beowulf Clusters as well as Windows & Linux mixed clusters.

Since 2008, completely switched to Linux OS. Adept at Bash scripting. Now using Octave as the default mathematics software and if need arises, integrating GNU Scientific Library in C++ code. Also doing DFT calculations using VASP and thermodynamic calculations using Thermo-Calc software packages.

HOBBIES

Literature

(for a more detailed list check <http://www.emresururi.com/page.php?page=about&lang=en>)

Jean-Paul Sartre, Oguz Atay, Haruki Murakami, Michel Butor, Roland Barthes, Honoré de Balzac, Michel Tournier, Matsuo Basho, Ahmet Hasim, Edip Cansever, T.S. Eliot, J.D. Salinger,...

Being an amateur writer myself, I've yet managed to publish my stories in some magazines and also have achieved 1st prize in a local story-writing contest with my story about a Kafkaesk physics professor failing to realize he has died already...

Movies

(for a more detailed list check <http://www.emresururi.com/page.php?page=about&lang=en>)

Kar Wai Wong, Aki Kaurismäki, Jim Jarmusch, *It's a Wonderful Life*, *High Fidelity*, *Un Coeur en Hiver*, *La Cité des Enfants Perdus*, *À Bout de Souffle*,...

Web page design & coding

Designer, coder and editor of "Epigraf: Literature Site"

(<http://epigraf.fisek.com.tr>) (In Turkish)

Coder of the "Guben Blogger" which I also use for my blog entries that can be accessed via <http://www.emresururi.com/blogs/sururi/> (In Turkish)