

## CURRICULUM VITAE of Prof. FERIDE ZORLU SEVERCAN

15.04.2019	
Prof. Dr. FERİDE SEVERCAN	
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### 1. EDUCATION

1979	Ph.D	Hacettepe University.	Physics Engineering Dept.
1971	M.S	Rochester Univ.NY. USA	Physics Dept.
1969	B.S	Ankara Univ.	Physics Dept.

### 2. ACADEMIC WORK

#### In Turkey

Sept. 2016-	Prof. Dr, Full time	Altinbas Univ.	Faculty of Medicine, Biophysics Dept.
Dec. 2015-Sept. 2016	Prof. Dr. Research Staff	Hacettepe Univ. Dept. of Medicine	TÜBİTAK-1003 Project
Nov. 2015-2017	Prof. Dr. Part time	METU	Dept. of Biological Sciences
1992-Nov.2015	Prof. Dr. Full time	METU	Dept. of Biological Sciences
1998-2001	Prof. Dr. (Part time)	Başkent Univ.	Fac. Medicine,-Biophysics Dept.
1990-1992	Prof. Dr.	Dokuz Eylül Univ.	Dept. Elect. and Electronics Eng, Faculty of Medicine-Biophysics
1986-1990	Assoc. Prof. Dr.	Dokuz Eylül Univ.	Dept. Elect. and Electronics Eng, Dept. of Medicine-Biophysics
1982-1985	Asst. Prof. Dr.	Hacettepe Univ..	Physics Engineering Dept..
1971-1982	Lecturer	Hacettepe Univ.	Physics Engineering Dept.

#### In Abroad:

##### Long term visits

1981-1982	Lecturer	San Francisco State Univ.,USA	Physics Dept.
1981-1982	Visiting Researcher	San Francisco State Univ.,USA	Chemistry Dept.
1980-1981	Post. Doc. Researcher	Stanford Univ.,USA	Chemistry Dept.
1987-1989	Visiting Researcher	Perugia Univ.	Physics Dept.

##### Short term visits

1986-1992 (3 months/ summer)	Visiting Researcher	Int. Center Theoretical Phys., Trieste, Italy	
1996-98 (3 months/year)	Visiting Researcher	Univ. California, SC,USA	Dept. Biochem.
1993-96 (3 months/year)	Visiting Researcher	BATH Univ., UK	Dept. Biochem.
1996 (3 months-summer)	Visiting Researcher	London Univ.	Royal Free Hospital
1997-2004 (1-2 months/year)	Visiting Researcher	De Montford Univ., UK	Dept. Health Sciences
2001 (3 months)	Visiting Researcher	North West Pasific Lab,USA	
2010-2014 (2-4 weeks/year)	Visiting Researcher	SUNY, Albany, NY	Life Sciences
2011-2017 (1-2 weeks/year)	Visiting Researcher	RPI, Troy, USA	Computer Science
2018 (one week)	Visiting Scientist	Qatar Research Foundation and Qatar University	Biophyscis section Chemistry Dept

### 3. ADMINISTRATIVE WORK

Oct.2016-	Head	Biophysics Department, Medical School, Altinbas University
Oct. 2017-	Head	Biomedical Sciences Graduate Programme
Nov.1994- Dec. 1997	Chairman*	METU, Dept Biological Sciences
Several years	Coordinator	Biology Dept. Graduate Committee-Middle East Technical Univ. (METU)
For three years	Biology Dept. Representative	Biotechnology Graduate Committee of METU
1998-2000	Vice President	Turkish Biophysical Society
2000-2004	General Secretary	Turkish Biophysical Society

\* **Founder of Molecular Biology and Genetics Department in 1996 at METU**

#### 4. AWARDS AND SCHOLARSHIPS :

<b>Title of the Award</b>	<b>Institution</b>	<b>Year</b>
Achievement of 2.nd best academic performance in the University	Altinbas University	2017
Best Project and academician award	Altinbas University	2017
Achievement of High Academic Performance	Middle East Technical Univ.	2016
Achievement of High Academic Performance	Middle East Technical Univ.	2015
Achievement of High Academic Performance	Middle East Technical Univ.	2014
Achievement of High Academic Performance	Middle East Technical Univ.	2013
Achievement of High Academic Performance	Middle East Technical Univ.	2011
Achievement of High Academic Performance	Middle East Technical Univ.	2010
Achievement of High Academic Performance	Middle East Technical Univ.	2009
Achievement of High Academic Performance	Middle East Technical Univ.	2007
Achievement of High Academic Performance	Middle East Technical Univ.	2005
Achievement of High Academic Performance	Middle East Technical Univ.	2003
Achievement of High Academic Performance	Middle East Technical Univ.	2001
Achievement of High Academic Performance	Middle East Technical Univ.	2000
Achievement of High Academic Performance	Middle East Technical Univ.	1999
Supervisor of best Ph.D thesis (Sebnem Garip)	Middle East Technical Univ.	2013
Supervisor of best Ph.D thesis (Gulgun Cakmak)	Middle East Technical Univ.	2010
Supervisor of best M.S thesis (Özlem Bozkurt)	Middle East Technical Univ.	2006
Supervisor of best Ph.D thesis (Handan Boyar)	Middle East Technical Univ.	2004
Best paper award (Cakmak, Togan, Severcan).	WSEAS	2005
Associate membership	Int. Cent. Theoretical.Phys.	1985-92
Graduation with High Honour	Ankara University	1969
Rank 8 th	University Entrance Exam	1965
Graduation with rank 1 th	Ankara Girls High School	1965



## PROJECTS

Number of Projects	Projectcoordinator	Researcher	Consultant
International	11	1	1
National (TÜBİTAK ve DPT)	21	13	2
University funded (e.g. Interdisciplinary)	11	4	
University funded (for graduate students)	≥50		

## GRADUATE STUDENTS

Number of Graduate students		Completed
	M.Sc	44
	Ph. D	21
Number of Post. Doctoral Students		7

## EDITORIAL WORK AND REFEREEING

Editorial board member	1- Scientific Reports-Nature, 2- Frontiers-Pharmacology (will end May 2019) 3- Journal of Spectroscopy 4- Turkish Journal of Biology 5- Clinical Sciences 6- Biomedical Spectroscopy and Imaging
As a Reviewer: Scientific Reports; Analytical Chemistry; Journal of Membrane Biology; J. Biological Physics; Critical Reviews in Analytical Chemistry; Chem. Physc. Lipids; J. of Biophotonics; Spectroscopy Letter; Science of the Total Environment; Ecotoxicology and Environmental Safety; Analytical Letters; Analytical Methods, IEEE Sensors Journal; Food Analytical Methods; European Food Research and Technology; Food and Chemical Toxicology; NeuroMolecular Medicine; World Journal of Clinical Oncology; Biochim. Biophysic. Acta; Plos One, Bioinformatics; Applied Spectroscopy; Biopolymers; Biophysical Chemistry; Arch. Biochem. Biophys.; Vibrational spectroscopy; Analy. Bioanaly. Chem.; Int. J of Pharmaceutics; Journal of Pharmaceutical Sciences; Journal of Pharmaceutical and Biomedical Analysis; Ann. Biomed. Eng.; Spectrochimica Acta; Tech. in Cancer Res. and Treatment; Cell Biochem. Biophys.; T. J. Biochem.; J. Biomed. Biotech.; Arch. Med. Research ; J. Plant Growth Regulation; J. Agricul. Food Chem.; Biophysical Reviews and	

Letters; Amino acids; Eur. J. Clin. Inv.; J. Mol. Struct.; Microscopy Res.Tech.; Toxicology Reports; Toxicol. & Environmental Chem.; Tissue and Cell; Aquatic Sciences,;TAXON; Molecular and Cellular Biochemistry; Chinese Optics Letters; Computers in Biology and Medicine, Food Control

## 5. FIELDS OF ACADEMIC INTEREST

### **Disease Diagnosis and Characterisation, Molecular Biophysics, Biological Spectroscopy and Imaging, Vibrational Spectroscopy in Diagnosis and Screening, Ecotoxicology and Food Science**

1. Biomedical Diagnosis and characterisation (Molecular characterisation and diagnosis of several diseases using normal and pathological human and animal tissues, cells and membranes such as diabetes mellitus, obesity, cancer, epilepsy, MS and Alzheimer's.
2. Protective and treatment role of antioxidants and different drugs on several diseases
3. Effect of radiation on different tissues.
4. Biological spectroscopy and imaging and calorimetry in biological system characterization including medical, food and plants and of environmental problems.
5. Interaction between Biological Molecules.
6. Structure and Function of Biological Membranes.
7. Drug-Liposome Interactions,
8. Protein Structure, Function and Stability.

### **GRADUATE THESIS COMPLETED:**

#### **M.Sc. Thesis**

- 1) **Kumsal Özgün Badem**, The Molecular Investigation of the Effects of Simvastatin, A Cholesterol Reducing Drug, on Rat Sciatic Nerve, Middle East Technical University (METU), **2017**.
- 2) **Emrulla Spahiu**, ATR-FTIR evaluation of structural and functional changes on murine macrophage cells upon activation and suppression by immunotherapeutic oligodeoxynucleotides, Middle East Technical University (METU), **2015**.
- 3) **Mehmet Kardaş**, Monitoring of cobalt adaptation of environmental bacterial isolates using ATR-FTIR spectroscopy, METU, **2014** (Co-advisor: Prof. Dr. Feride Severcan).
- 4) **Aysun İnan Genç**, Molecular characterization of the effects of valdecoxib on colon cancer cell lines (ht29 & sw620) using ATR-FTIR spectroscopy, METU, **2014**.
- 5) **Richardas Rachkauskas**, Structural and functional effects of non-steroidal anti-inflammatory drugs rofecoxib and valdecoxib on DSPC model membranes, METU, **2014**, (Co-advisor: Prof. Dr. Feride Severcan).
- 6) **Seher Gök**, Attenuated total reflectance fourier transform infrared spectroscopy of fluid systems: case study applications to diagnosis and screening in biomedical and food areas, METU, **2013**.
- 7) **Damla Güldağ**, The effects of streptozotocin induced-diabetes on rat testes and the

- recovery role of vitamin C, METU, **2012**.
- 8) **İlke Şen**, Macromolecular characterization of adipose tissues in inbred obese mouse models, METU, **2012**.
  - 9) **Ebru Aras**, Characterization of skeletal muscle lipids in obese mice lines, METU, **2012**.
  - 10) **Seza Ergün**, Structural and functional investigation of the interaction of agomelatine with model membranes, METU, **2012**.
  - 11) **Çiğdem Kansu**, Characterization of yellow rust and stem rust resistant and sensitive durum wheat lines at molecular level by using biophysical methods, METU, **2011**, (Co-advisor: Prof. Dr. Feride Severcan).
  - 12) **Ediz Sarıışık**, Interactions of cholesterol reducing agent simvastatin with charged phospholipid model membranes, METU, **2010**.
  - 13) **Rafiq Gurbanov**, The effects of selenium on stz-induced diabetic rat kidney plasma membrane, METU, **2010**.
  - 14) **Özge Zelal Aydın**, Detection of bladder tumor recurrence by Fourier transform infrared spectroscopy as a novel method, METU, **2009**.
  - 15) **Aslı Sade**, Interaction of the non steroidal anti inflammatory drug celecoxib with pure and cholesterol-containing model membranes, METU, **2009**, (Co-advisor: Prof. Dr. Feride Severcan).
  - 16) **Ümit Acar**, Sarımsağın nötr model membranlarla etkileşmesinin biyofiziksel yöntemler ile incelenmesi, Ege Üniversitesi, **2009**. (Co-advisor: Prof. Dr. Feride Severcan).
  - 17) **Mustafa Koçak**, Interactions of cholesterol reducing agent simvastatin with phospholipid model membranes, METU, **2007**.
  - 18) **Nihal Şimşek Özek**, The molecular investigation of the effects of simvastatin, a cholesterol reducing drug, on different rat skeletal muscle tissues, METU, **2007**.
  - 19) **Birsen Elibol**, Effects of chronic ethanol consumption on memory and molecular changes in the hippocampus of young adult wistar rats, METU, **2007**, (Co-advisor: Prof. Dr. Feride Severcan).
  - 20) **Özlem Bozkurt**, The effect of diabetes on rat skeletal muscle tissues at molecular level, METU, **2006**.
  - 21) **Şebnem Garip**, The characterization of bacteria with Fourier Transform Infrared (FTIR) spectroscopy, METU, **2005**.
  - 22) **Kurtuluş Gökdoğan**, Effects of hydrogen peroxide bleaching on human dentin and enamel microstructure and function, METU, **2005**.
  - 23) **Ayşe Özge Kepenek**, Preliminary approach for the determination of fish exuded kairomone using fourier transform infrared spectroscopy, METU, **2005**.

- 24) **Emre Koyuncu**, Expression, purification and functional analysis of adenovirus type 5 E4 ORF3 Protein, METU, **2004**.
- 25) Levent Kaya, Biosorption sites for lead [Pb(II)] in phanerochaete chrysosporium, METU, 2004, (Co-advisor: Prof. Dr. Feride Severcan).
- 26) **Sara Banu Akkaş**, Molecular investigation of the effects of antioxidants on rat brain tissues, METU, **2003**.
- 27) **Filiz Korkmaz**, Biophysical studies of progesterone-model membrane interactions, METU, **2003**, (Co-advisor: Prof. Dr. Feride Severcan).
- 28) **İpek Şahin**, Melatoninin model hücre membranları ile etkileşmesinin biyofiziksel yöntemlerle incelenmesi, Ege Üniversitesi, **2003** (Co-advisor: Prof. Dr. Feride Severcan).
- 29) **Neşe Kaptan**, Infrared spectroscopic study of diabetic rat heart crude membranes, METU, **2002**.
- 30) **Sevgi Türker**, Physicochemical study on the genera, acantholimon, astragalus and ranunculus, METU, **2002**.
- 31) **Soner Aksu**, Spectroscopic investigation of vitamin D3-melittin-model membrane interaction, METU, **2002**.
- 32) **Gülğün Çakmak**, Spectroscopic analysis of the livers in rainbow trout (*Oncorhynchus mykiss*) exposed to nonylphenol, METU, **2001**.
- 33) **Yavuz Öztürk**, Construction and analysis of a soluble version of the membrane-attached cytochrome Cy in rhodobacter capsulatus, METU, 2001
- 34) **Ayça Doğan**, The effects of gamma irradiation on hazelnut tissue at molecular level by fourier transform infrared spectroscopy, METU, **2001**.
- 35) **Özlem Ünver**, Molecular dynamics of pig citrate synthase, METU, **2000**.
- 36) **Wasfi Abdel Kerim Al-Azzam**, Thermal stabilization of pig citrate synthase by crosslinkingwith bisimidoesters, METU, **1999**.
- 37) **Zuhal Yazıcı**, Effects of vitamin E on human erythrocyte membranes, METU, **1999**.
- 38) **Neslihan Toyran**, The effect of divalent ions on model membranes, METU, **1999**.
- 39) **Hüseyin Okan Durmuş**, Spectroscopicstudies of melittin in solution and in lipid bilayers, METU, **1998**.
- 40) **Hüseyin Okan Durmuş**, Spectroscopicstudies of melittin in solution and in lipid bilayers, METU, **1998**.
- 41) **Fatma Eker**, The effect of Vitamin D2 on phospholipid model membranes and protein-lipid interactions, METU, **1997**.
- 42) **Handan Boyar**, Interaction of estrogen and tamoxifen with phospholipid model membranes: an FTIR study, METU, **1995**.
- 43) **Erhan Süleymanoğlu**, Effects of metal ions on nucleic acid, protein (melittin) and

drug (tamoxifen)-phospholipid membrane interactions. METU, **1995**.

- 44) **Ülkü Baykal**, Interaction of vitamin E with cholesterol-containing phospholipid liposomes, METU, **1994**.

#### **Ph.D Thesis**

- 1) **Eda Şeyma Kepenek**, Molecular Adaptations in Cadmium and Lead Resistant Environmental Species, METU **2017**, (Co-advisor: Prof. Dr. Feride Severcan).
- 2) **Fatma Küçük Baloğlu**, Biophysical Characterization and Diagnosis Of Obesity From Adipose Tissue By Fourier Transform Infrared Spectroscopy And Imaging, METU, **2017**.
- 3) **Seher Gok**, Effects of novel Compound derived from vitamin E on breast cancer cell line, METU, **2017**
- 4) **Nuri Ergen**, Effects Of Novel Compound Derived From Vitamin E on Prostate Cancer Cell Line, METU, **2016**.
- 5) **Rafiq Gurbanov**, Characterization of heavy metal resistant bacteria using infrared spectroscopy together with chemical pattern recognition techniques, METU, **2016**.
- 6) **Sherif Abbas Mousa Abbas**, Biophysical characterization of proteins in solution and human fluids for cancer diagnosis applications using fourier transform infrared spectroscopy, METU, **2016**.
- 7) **Nihal Şimşek Özek**, Characterization of molecular-level changes due to MicroRNA-125B expression in breast cancer cells by spectroscopic and chemometric analysis techniques, METU, **2015**.
- 8) **Hande Baltacıoğlu**, Inactivation mechanism of polyphenol oxidase during ultrasound treatment, METU, **2014** (Co-advisor: Prof. Dr. Feride Severcan).
- 9) **Tuğba Özaktaş**, Heavy metal-induced structural and functional changes in clinical and environmental acinetobacter isolates, METU, **2014** (Co-advisor: Prof. Dr. Feride Severcan).
- 10) **Ceren Aksoy**, Characterization and identification of human mesenchymal stem cells at molecular level, METU, **2012**.
- 11) **Şebnem Garip**, Investigation of drug-related changes on bone tissues of rat animal models in healthy and disease states, METU, **2012**.
- 12) **Özlem Bozkurt**, Study of bone characteristics and muscle quality in metabolic disorders, METU, **2012**.
- 13) **Melek Duygu Bilge**, İlaç-lipit ve pteoin-lipit etkileşimlerinin biyofiziksel teknikler ile

tamoxifen-herceptin(trastuzumab)-model membran sisteminde incelenmesi, Ege Üniversitesi, **2011** (Co-advisor: Prof. Dr. Feride Severcan).

- 14) Gülgün Çakmak**, The effects of radioprotectant amifostine on irradiated rat brain and liver tissues, METU, **2010**.
- 15) Sevgi Görgülü Türker**, Molecular investigation of ptz-induced epileptic activities in rat brain cell membranes and the effects of vigabatrin, METU, **2009**.
- 16) Sara Banu Akkaş**, The effect of ecotoxicants on the aquatic food web and prey-predator relationships, METU, **2009**.
- 17) İpek Şahin**, Melatonin'in model ve biyolojik membranlarla etkileşmesinin fiziksel yöntemlerle incelenmesi, Ege Üniversitesi, **2009** (Co-advisor: Prof. Dr. Feride Severcan).
- 18) Cağatay Ceylan**, The evaluation of high hydrostatic pressure effects on bovine blood constituents and microbial survival, **2005** (Co-advisor: Prof. Dr. Feride Severcan).
- 19) Handan Boyar**, Biophysical investigation of the effects of antioxidants on normal and diabetic rat bone tissues at molecular level, METU, **2004**.
- 20) Güvenç Görgülü**, The effects of antioxidants on some rat tissues and membranes, METU, **2004** (Co-advisor: Prof. Dr. Feride Severcan).
- 21) Neslihan Toyran Al-Otaibi**, Molecular approach with Fourier transform infrared spectroscopy to different pathological systems (diabetes mellitus and arteriovenous malformation) with various treatments, METU, **2003**.

## **PUBLICATIONS**

### **BOOKS**

- 1.** "VIBRATIONAL SPECTROSCOPY IN DIAGNOSIS AND SCREENING" Eds: **Severcan F** and Haris PI, IOS PRESS, 2012,
- 2.** "MOLECULAR BIOPHYSICS AND BIOTECHNOLOGICAL APPLICATIONS" Eds. Kan B and **Severcan F.** 1997, TÜBİTAK-MAM Press
- 3.** "PROTEIN STRUCTURE, FUNCTION AND STABILITY" **Severcan F.**(Ed.) METU PRESS, 1994.
- 4.** University Physics, PSSS (one of the translators from English to Turkish) Natural Education Publishing Company, 1975.

### **BOOK CHAPTERS**

1. Mollaoğlu Dogan Ayca, Ozyurt Ipek, **Severcan Feride** “**Applications of Infrared Spectroscopy and Microscopy in Diagnosis of Obesity**” in “*Infrared Spectroscopy - Principles, Advances, and Applications*” Intechopen , ISBN 978-953-51-6276-6
2. Baloglu Kucuk Fatma., **Severcan Feride**, “**Characterization and Differentiation of Adipose Tissue by Spectroscopic and Spectral Imaging Techniques**” in *Adipose Tissue*, Ed. Leszek Szablewski, InTechOpen, ISBN 978-953-51-6064-9.
3. Aksoy Ceren And **Severcan Feride**, “**Infrared Spectroscopy and Imaging in Stem Cells and Aging Research**” in “*Stem Cells and Aging*”, Springer Protocols, **2018**, 119, DOI: <https://doi.org/10.1007/7651>, Humana Press.
4. **Feride SEVERCAN** and Parvez I HARIS, “**Introduction to Vibrational Spectroscopy in Diagnosis and Screening**” in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:1-11, ISBN: 978-1-61499-058-1.
5. **Feride SEVERCAN**, Banu AKKAS, Sevgi TURKER and Recai M YUCEL, “**Methodological Approches From Experimental to Computational Analysis In Vibrational Spectroscopy and Microspectroscopy**” in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:12-52, ISBN: 978-1-61499-058-1.
6. Yekbun ADIGUZEL, Parvez I HARIS and **Feride SEVERCAN**, “**Screening of Proteins in Cells and Tissues By Vibrational Spectroscopy**” in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:52-108, ISBN: 978-1-61499-058-1.
7. Ceren AKSOY and **Feride SEVERCAN**, “**Characterization of Stem Cells by Vibrational Spectroscopy**”, in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:138-164, ISBN: 978-1-61499-058-1.
8. Damla GULDAG, Ozlem BOZKURT, Sreeparna BANERJEE and **Feride SEVERCAN**, “**Screening And Diagnosis of Diabetes By Vibrational Spectroscopy**” in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:238-271, ISBN: 978-1-61499-058-1.
9. Sara B. AKKAS and **Feride SEVERCAN**, “**Diagnosis and Screening of Aquatic Environments by Vibrational Spectroscopy**” in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, ISBN: 978-1-61499-058-1.
10. Nihal Simsek OZEK, Aliea AFNAN, Justin BUENO, Greg McLAUGHLIN, Megan RALBOVSKY, Aliaksandra SIKIRZHITSKAYA, Vitali SIKIRZHITSKI, **Feride SEVERCAN**, and Igor K. LEDNEV, “**Forensic Applications of Vibrational Spectroscopy On Screening And Characterization Of Tissues**”in “*Vibrational Spectroscopy in Diagnosis and Screening*” Eds: Severcan F and Haris PI, IOS press, **2012**, PP:350-385, ISBN: 978-1-61499-058-1.

11. **Severcan F.,** Bozkurt O., “**Application of Vibrational Spectroscopy to Investigate Radiation-induced Changes in Food**”, in “*Applications of vibrational spectroscopy in food science,*” Eds. Eunice Li-Chan, Peter R. Griffiths, John M. Chalmers (2010). John Wiley and Sons Ltd., pp: 241-259, ISBN 978-0-470-74299-0.
12. V.Hasirci, F. Korkusuz, E. Bayramlı, N. Hasircı, F. Severcan, M. Timucin, G. Alaeddinoglu, N Akkas “Production of Microbial Polyesters and their Application in the Construction of Biodegradable, Controlled Antibiotic Release Systems” in Tissue Engineering and Novel Delivery Systems (Eds: M J. Yaszanski et al.) Markel Dekker, **2004**
13. Bayarı S, **Severcan F,** Gürsel I, Hasircı V and Alaeddioğlu G, The FTIR Studies of the Poly (3-hydroxybutyrate) and Poly (3-hydroxybutyrate-co-3-hydroxyvalerate), **New Biomedical Materials** Eds. P.I Haris and D. Chapman), IOS Press, (1998).
14. **Severcan F. &** Plachy, W. Z. Rotational tumbling of PDDTBN in cholesterol lecithin membranes. **Application of Physics to Medicine and Biology** (Eds. Z. Bajzer, P. Baxa, C. Franconi), 568-569, World Scientific Publ. Comp. (1984).
15. **Severcan F.,** Application of spectroscopic techniques in the study of protein structure and stability, MOLECULAR BIOPHYSICS AND BIOTECHNOLOGICAL APPLICATIONS" Eds. Kan B and **Severcan F.** 1997, TÜBİTAK-MAM Press.
16. **Severcan F.,** Basics of Spectroscopy, in **Protein Structure, Function and Stability** (Eds. Severcan F and Hough D) 1994. METU Press.

#### ARTICLES IN REFEREED JOURNALS (Web of Science-SCI)

1. Sarisik E, Kocak M, Kucuk Baloglu F, Severcan F, “Interaction of the Cholesterol Reducing Agent Simvastatin with zwitterionic DPPC and charged DPPG Phospholipid Membranes” Biochem. Biophysc. Acta-Biomembranes, 2019  
doi: 10.1016/j.bbamem.2019.01.014.
2. Kepenek E. S., Gozen A, Severcan F., “Molecular characterization of acutely and gradually heavy metal-acclimated aquatic bacteria by FTIR spectroscopy”, J. Biophotonics.. 2018 Dec 21:e201800301. doi: 10.1002/jbio.201800301.
3. Abbas Sherif , Ozek Simsek Nihal, Emri Salih, Koksal Deniz, Severcan Mete, **Severcan Feride,** “Diagnosis of Malignant Pleural Mesothelioma from Pleural Fluid by FTIR Spectroscopy coupled with chemometrics”, **J. Biomedical Optics,** 2018 Oct;23(10):1-14.  
doi: 10.1117/1.JBO.23.10.105003.
4. Yonar D., Ocek L., Tiftikcioglu B. I., Zorlu Y., **Severcan F.,** Relapsing Remitting Multiple Sclerosis diagnosis from cerebrospinal fluids via Fourier transform infrared

- spectroscopy coupled with multivariate analysis. **Scientific Reports-Nature**, **2018**, 8:1025 | DOI:10.1038/s41598-018-19303-3
5. Gurbanov R, Simsek Ozek N, Tunçer S, **Severcan F**, Gozen AG., Aspects of silver tolerance in bacteria: IR spectral changes and epigenetic clues. **J Biophotonics**. 2017 Dec 15. doi: 10.1002/jbio.201700252.
  6. Ustaoglu S.G., Evis Z., Ilbay G., Boskey A., **Severcan F**. Side-Effects of Convulsive Seizures and Anti-Seizure Therapy on Bone in a Rat Model of Epilepsy. **Applied Spectroscopy**, **2018** Jan 1:3702817734617. doi: 10.1177/0003702817734617.
  7. Gurbanov R, Gozen A.G, **Severcan F.**, Rapid classification of heavy metal-exposed freshwater bacteria by infrared spectroscopy coupled with chemometrics using supervised method., *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* , **2018**, Jan 15;189:282-290. doi: 10.1016/j.saa.2017.08.038.
  8. Baloglu F.K, Baloglu, O, S. Heise, G. Brockmann, **F. Severcan**, “Triglyceride Dependent Differentiation Of Obesity In Adipose Tissues By FTIR Spectroscopy Coupled with Chemometrics”, **J. Biophotonics**, **2017**, Volume: Pages: 1345-1355 , DOI: 10.1002/jbio.201600223.
  9. Baltacıoğlu H, Bayındırlı A, **Severcan F**, “Secondary Structure and Conformational Change of Mushroom Polyphenol Oxidase during Thermo-sonication Treatment by using FTIR Spectroscopy” **Food Chemistry**, **2017**, 214, 507–514.
  10. Genc A.I, Banerjee S, **Severcan F**, “Valdecoxib recovers the lipid composition, order and dynamics in colon cancer cell lines independent of COX-2 expression: An ATR-FTIR Spectroscopy Study”. **Applied Spectroscopy**, **2017**, 71(1), 105-117,
  11. Ozek N.S., Zeller I, Renaud D.E, Gümüş P, Nizam N, **Severcan F**, Budeneli N, Scott D.A, “Differentiation of chronic and aggressive forms of periodontitis and smoking status by Fourier-transform infrared spectroscopy”, **J. Dental Research**, **2016**, 95(13), 1472-1478.
  12. Cakmak G., Severcan M., Zorlu F., **Severcan F**, "The Structural and Functional Damages of Whole Body Ionizing Radiation on Rat Brain Homogenate Membranes and Protective Effect of Amifostine" **Int. J of Radiation Biology**, **2016**, 92(12), 837-848.
  13. Ozlem Bozkurt, Mehmet D. Bilgin, Zafer Evis, Feride Severcan, Early Alterations in Bone Characteristics of Type I Diabetic Rat Femur: A Fourier Transform Infrared (FT-IR) Imaging Study, **Applied Spectroscopy**, **2016**,70(12), 2005-2015.
  14. Demir P. and Severcan F., “Monitoring radiation induced alterations in biological systems, from molecules to tissues, through infrared spectroscopy”, **Applied**

- Spectroscopy Reviews**, 2016, 51(10), 839-863.
15. Gok S, Ozge Z, Aydin O.Z, Sural Y.S, Zorlu F, Bayol U, **Severcan F**, “Bladder Cancer Diagnosis From Bladder Wash By Fourier Transform Infrared Spectroscopy As a Novel Test for Tumor Recurrence”, **Journal of Biophotonics**, 2016, 9(9), 967-975.
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2. **Severcan F.** "A spin label ESR study of melittin-DMPC Liposomes", **DOGA J. Biol.** Vol. 12, No: 2, 123-127, **1988**.
3. **Severcan F.** "Spin labelling of normal human hemoglobin free erythrocyte ghost and spectrin". **DOGA J Biology A2**, Vol., No: 1, 111-117, **1985**.
4. **Severcan F.** "Fosfolipid (DMPC) –Kolesterol ikili karışımlarında faz dengesi", **DOGA A1**, Vol. 8, No: 1, 47-53, **1984**.
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#### ABSTRACTS IN NATIONAL CONGRESSES

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## NATIONAL BOOK CHAPTERS

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## PROJECTS

### INTERNATIONAL:

1. **F.Severcan-MC member, COST Action BM1401-** Raman-Based applications for Clinical Diagnostics (Raman4 Clinics); Starting date: 14/05/2014, Ending date: 11/12/2018
2. **F. Severcan-Consultant, QUATAR NATIONAL PRIORITY RESEARCH PROGRAM- NPRP No.: NPRP 7 - 1648 - 3 – 420**, “Characterization of physiological, structural and biomolecular changes in brain tissue underlying functional impairment after experimental traumatic brain injury"- May-2014-May 2017, Budget: 900000\$
3. **F.Severcan (Local Coordinator), TUBITAK-KBAG-114Z424:** Binary Projectct with Ukrania, “Synthesis of a Novel Vitamin-E Analogue and Investigation of its Anticancer Properties in Breast and Prostate Cancer Cells by Biochemical,Biophysical and Molecular Biological Techniques”; Budget: 270 000 TL; 15.01.2015-
4. **F. Severcan (MC member) COST Action BM0901, SYSGENET –** “European systems genetics network for the study of complex genetic human diseases using mouse genetic reference populations”, Nov. 2009-Nov. 2013.
5. **F. Severcan (Local Coordinator).** Germany-Turkey, Promotion German-Turkish Higher Education Research Projectct TÜBİTAK-SBAG-BMBF-6 (108S264), “Genetic and Biophysical Investigation of The Relation Between Muscle Characteristics and Obesity”, Duration:2009-2012, Budget: 120000 EUR for each Country.
6. **F. Severcan (Local Coordinator).** “Study of the Capabilities and Requirements of Operational Client-Server Health Information System for Diabetes (TeleDiab)”. Organization of the Black Sea Economic Cooperation Projectct Development Fund, 2006-2007.
7. **F. Severcan (Local Coordinator).** “Protein secondary structure determination from

- FTIR data”. Royal Society (UK) Scientific Exchange Research Fund, 2000-2003; 2003-2005
8. **F. Severcan (Local Coordinator)**. “Biophysical Studies of Protein Structure, Function and Stability”. British Council Academic Link, 1997-2000.
  9. **F. Severcan (Researcher)**. “The Production and Application of Microbial Polyesters in the Construction of Biodegradable Controlled Antibiotic Release systems and Bone Fracture Repair Rods”. NATO Science for Stability, 1996-1998.
  10. **F. Severcan (Local Coordinator)**. NATO SA.(CRG.951356), “Structure, function and stability of thermophilic enzymes”. NATO , 1996-1997.
  11. **F. Severcan (Local Coordinator)**. “The Structural Basis of Enzyme Stability in Extreme Environments”. British Council Academic Link, 1993-1996.
  12. **F. Severcan (Local Coordinator)**, “Drug-model membrane interactions” Third World Academy of Science, 1987-1989.
  13. **F. Severcan (Coordinator)**. No: **35-TUR-1**", Application of Spin Labeling ESR spectroscopy technique to Parotid Saliva", TWAS Third World Academy of Sciences, Trieste, Italy, 1988-1989.

#### **NATIONAL:**

1. **F. Severcan (Consultant), TÜBİTAK-1512 – Techno-Enterprise support Programme– 2150122**; Contractor: Dr. Akın Sevinç, “ Genetik Bozuklukların Tanısında Yeni, Hızlı ve Güvenilir Bir Ürün Geliştirilmesi ve Doğum Öncesi Genetik Tanı Alanında Uygulanması” Başlangıç-Bitiş Tarihleri: 1 Temmuz 2016 - 31 Aralık 2017; Budged: 150.000 TL
2. **F. Severcan (Researcher) TUBİTAK-1003**, Development of Chemical Sensor Based Device Prototype for Scanning and Detection of Volatile Markers in Human Breath for Early Phase Lung Cancer, worked between 2015-2016 , Budget, 3.000.000 TL
3. **F. Severcan (Coordinator) TUBİTAK-ÇAYDAG-113Y515**, “Method development for design and choice of bacteria in sustainable bioremediation of heavy metals”, 15.04.2014-15.04.2016; Budget: 296.036 TL,
4. **F. Severcan (Coordinator), TUBİTAK-1002-SBAG-115Z702**, “Investigation of Obesity Induced Type 2 Diabetes dependent molecular alterations and therapeutic effect of Palmitoleic Acid on these alterations in adipose tissue by Fourier Transform Infrared Microspectroscopy”, Budget 29.992 TL, 15.08.15- 15.08.16,
5. **F. Severcan (Researcher), TUBİTAK–SBAG-113S294**, “Evaluation of Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) Spectroscopy

- as a diagnostic method for the diagnosis of malignant pleural mesothelioma from body fluids”, 15.10.2013-15.10.2015; Budget: 297.650 TL,
6. **F. Severcan (Coordinator) , TÜBİTAK-2232 - 115C061 (Fellow: Dr. Akin Sevinc)**, The possible therapeutic effects of gamma-tokotrienol on liver cancer cell lines. 30 March 2015 - 30 March 2017; Budget: 107.986 TL.
  7. **F. Severcan (Consultant), TÜBİTAK-3001-SBAG-Projectct no: 114S848** “Investigation of systemic inflammation on rat hippocampus at molecular level by Fourier Transform Infrared spectroscopy and imaging) 2014- 2015.
  8. **F. Severcan (Coordinator), ÖYP-DPT Projectct: No: BAP-08-11-DPT.2012K121010**, The investigation of the effects of Non-Steroidal inflammatory drugs ( COX-2 inhibitor) on colon cancer by Fourier transform infrared spectroscopy at molecular level”, 2012-2013.
  9. **F. Severcan (Coordinator). ÖYP-DPT Projectct: No: BAP-08-11-DPT.2011K121010.** “The investigation of the structural and functional variations on breast cancer cells and membranes due to MikroRNA125b Transfection by ATR-FTIR Spektroskopy”, 2011-2012.
  10. **F. Severcan (Coordinator), TÜBİTAK - Projectct No: SBAG- 110S235 (COST National Projectct) "** Characterisation of different adipose tissues of inbred obese Mouse models” " 01.02.2011-01.08.2013, Budget: 303.670 TL
  11. **F. Severcan (Coordinator), TÜBİTAK-1002, Projectct No: 210T125**, “ Structural and functional investigation of Agomelatine-model membrane interactions by biophysical techniques”. 2011-2012, Projectct budget: 25.000 TL.
  12. **F. Severcan (Coordinator). TÜBİTAK-1002, Projectct No: TBAG-108T616**, “Investigation of Simvastatin-membrane interactions by biophysical techniques at molecular level” 2008-2009.
  13. **F. Severcan (Coordinator), ÖYP-DPT Projectct, BAP-08-11-DPT2002K120510-TB-04,**“ The investigation of the effects of cholesterol reducing agent simvastatin on nerve tissues at molecular level“, 2006-2008.
  14. **F. Severcan (Coordinator). TÜBİTAK-1001-SBAG-2940 (104S475)** “The investigation of the molecular mechanism of epilepsy and the role of anti-epileptic drugs vigabatrin and topiramate in the treatment of epilepsy”, 2005-2008.
  15. **F. Severcan (Coordinator). ÖYP-DPT Projectct: BAP-08-11-DPT2002K120510-TB-04,**“ Investigation of molecular mechanism of epilepsy and action mechanism of some drugs“. 2004-007.
  16. **F. Severcan (Researcher), Projectct No: DPT-2003K1207-901**, “ The investigation of molecular mechanism of epilepsy and the role of some drugs on the treatment by molecular and biotechnological methods”, 2004-2007.

17. **F. Severcan (Researcher), TÜBİTAK-1001, Project No: SBAG-2939**, “Investigation of the effects of radioprotectant Amifostine on rat tissues by molecular methods” 2005-2007.
18. **F. Severcan (Coordinator), DPT Projects** “ The investigation of action mechanism of antioxidants on tissues and membranes by molecular and biotechnological methods”, 2001-2004.
19. **F. Severcan (Researcher), TÜBİTAK-1001-EEEAG-No: Project No: 100E036**, “Estimation of protein secondary structure from FTIR spectra using neural networks”, 2001-2004.
20. **F. Severcan (Coordinator), DPT Projects: BAP-01-08-DPT.2003K120920-13**, The investigation of the possible effects of antioxidants and amifostin used as a radioprotector on irradiated diabetic tissues with molecular and biotechnological methods”, 2003-2006,
21. **F. Severcan (Researcher), DPT Project**: “The effects of antioxidants on diabetic rat microsomal membranes”, 2003-2006.
22. **F. Severcan (Researcher), TÜBİTAK-1001-YDABÇAG-100YO35**, Detection of Alkyphenol pollution in River Sakarya and Değirmendere and effects of Nonylphenol on Rainbow trout”. 2002-2004.
23. **F. Severcan (Researcher), TÜBİTAK-1001, Project No: ÇAYDAG-104Y308**, “Design of a fast and dependable fish stock determination methodology based on the of physical and chemical fish Q” , 2005-2007,
24. **F. Severcan (Coordinator), DPT Projects**, “Investigation of therapeutic effects of Vitamin E and Selenium in diabetes by molecular and biotechnological methods” , 2002-2005.
25. **F. Severcan (Researcher). DPT Projects**, “Therapeutic effect of Lipophilic antioxidants and N-3 fatty acids on cancer”. 2002-2005.
26. **F. Severcan (Researcher). TÜBİTAK-1001, Project No: SBAG-2320**, Investigation of the molecular effect of stereotactic radiosurgery at chronic hypoperfused rat brain tissue and membrane by using biophysical techniques” 1998-2000.
27. **F. Severcan (Coordinator)**. “Molecular Biology- Biotechnology Research and Development Center Project”, State Planning Organisation of Turkey 1997-2000 for the establishment of Biotechnology Center in METU 1997-2000.
28. **F. Severcan (Coordinator). TÜBİTAK-1001, Project No: TBAG-1777**, “The role of steroids on Melittin-Membrane interaction”, 1999-2001.
29. **F. Severcan (Coordinator), DPT Projects** “Antioxidant action mechanism and their use in therapy” , 1997-2000

30. **F. Severcan (Researcher), TÜBİTAK-1001, SBAG**, Investigation of the effect of diabetes mellitus on several organ functional disorders by electrophysologic, biomechanic and molecular biophysical studies”. 1999-2001.
31. **F. Severcan (Coordinator), TÜBİTAK-1001, Project No: TBAG-1295**, “Investigation of Protein Structure, Function and Stability by Biophysical techniques”, 1996-1998.
32. **F. Severcan (Coordinator), DPT Projects: Project No: AFP01-08 DPT97K122060** “Interaction of Vitamin E and D with model and native Biological membranes” State Planning Organization Project, Coordinator: **F. Severcan** , 1996-1998, Budget: 3.500.000.000 TL
33. **F. Severcan (Coordinator), TÜBİTAK-1001, Project No: TBAG-1968**, “Using of estrogen and Vitamin E in treatment of Cardiovascular disorders”, 1992-1994.
34. **F. Severcan (Coordinator), TÜBİTAK-1001, Project No: TBAG-676**, “Molecular interactions in biological membranes”. 1984-1986.
35. **F. Zorlu (Severcan) (Researcher), TÜBİTAK, Project No: TBAG-1589**, “Investigation of physical, chemical and biophysical properties of organic negative ions and free radicals by ESR, NMR and ENDOR” 1973-1975.

#### **8.e. UNIVERSITY FUNDED PROJECTS (Interdisciplinary, with medium size budget)**

- 1) “The Investigation of the Therapeutic Effects of Histone Deacetylase Inhibitors on Colon Cancer Cells by Micro-nanotechnological Methods”, METU - Project, Budget: 23000TL; Feb-2015-Dec.2015 (**F. Severcan-Researcher**).
- 2) “The Investigation of Sodium Butyrate Concentration dependent Structural and contextual variations in Human Colon Adenocarcinoma Cells by Raman, FTIR and Terahertz Spectroscopic Techniques”, METU - Project, Budget 20500 TL , 01.01.2013-31.12.2015, F. Severcan-Coordinator)
- 3) **F. Severcan (Researcher), Disiplinler arası Project: BAP-07-02-2015-006**, Investigation of therapeutic effect of histone deacetylase inhibitor on colon cancer cell line using nanotechnology methods. Jan 2015-Dec. 2015, Budget: 18.190,24 TL.
- 4) **F. Severcan (Coordinator)**. “ Structural and functional studies of Spingomyelin Model Membrane interactions by biophysical approach ” **Project No: Bap-08-11-2013-012**; 01.2013-01.2014.
- 5) **F. Severcan (Researcher)**. “ Molecular characterization of aqueous bacteria due to Arsenic, Nickel and Cadmium resistance” **Project No: BAP-01-08-2013-004**; 01.2013-12.2013.
- 6) **F. Severcan (Researcher)**. “Quality control of embryo by FTIR spectroscopy”, **No: BAP- 08-11-2010-16 (METU-GATA Project)**, 2010-2011. Project budget: 18.000 TL/yıl, her bir kurum.
- 7) **F. Severcan (Coordinator)**. “Agomelatine –Model membrane interactions”, (**METU-GATA Project**), **Project No: BAP-08-011-2012-013 (METU-GATA İşbirliği Projesi)**, 2012-2014. Project budget 20.000 TL/yıl her bir kurum için.
- 8) **F. Severcan (Coordinator)**. “ The effects of Carbamazepin therapy on healthy rat bones”. **Project No: BAP-07-02-2010-003**, 2010-2011. Project budget: 20.000 TL/yıl, her bir kurum için.

- 9) **F. Severcan** (Coordinator). “Structural and functional studies of Antidepressant-membrane interaction” **Project No: BAP-08-11-2010-R-15, (METU-GATA İşbirliği Projesi)**, 2010-2012.
- 10) **F. Severcan** (Coordinator). “The effect of diabetes on rat kidney and the therapeutic role of Selenium”, **Project No: BAP-07.02.2009.03-, METU-BAP, Project**, 2009-2011.
- 11) **F. Severcan** (Researcher). “Characterization of yellow rust and stem rust resistant and sensitive durum wheat lines at molecular level by using biophysical methods”, **Project No: BAP-07.02.2009.02.. METU-BAP**, 2009-2011.
- 12) **F. Severcan** (Coordinator). “Therapeutic effect of vitamin C on diabetic liver tissues: An FTIR imaging study), 2008-2009, **METU-BAP**,
- 13) **F. Severcan** (Coordinator). “Investigation of the effects of streptozotocin induced-diabetes on rat testes and muscle and the recovery role of vitamin C by biophysical and bioinformatical methods”, **Project No: BAP-2006-R-07-217, METU-BAP**, 2006-2008.
- 14) **F. Severcan** (Coordinator), “ Study of the effects of diabetes and biotechnological diagnosis and treatment methods”. AFP-YUUP, 2003-2004.
- 15) **F. Severcan** (Coordinator), “ ESR spectroscopic study of Dynamics and thermal stability of Pig Citrate Synthase”. METU, 2002-2003
- 16) **F. Severcan** (Coordinator), AFP 96-01-08-17, Spin Label ESR spectroscopy in cancer research: Dokuz Eylül Üniversitesi: 1986-1987.

#### **8.f. Small size graduate student Projects**

Each M.Sc student had funding for 2 years, and each Ph.D student had funding for 4 years from METU for their graduate thesis Project.