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## Dr Sohrab Sanjabi

<b>Current Position</b>	<b>Head of Nanomaterials Group since 2008</b> , Associate Professor, Department of Materials Engineering, Tarbiat Modares University, Tehran-Iran since 2004.
<b>Interests</b>	Fabrication & characterisation of shape memory thin films and nanowires; theoretic approaches to the nanoscale. Self-cleaning photocatalytic thin films; smart films, high temperature nanocomposite coatings, self repairing coatings, modelling on the nanoscale, Alloy nanowire electrodeposition.
<b>Education</b>	<b>Ph.D. (2001- 2005), Materials Science and Engineering, Sharif University of Technology, Tehran-Iran</b>  Dissertation topic: <i>Fabrication and Characterization of Nanostructured Shape Memory NiTiX (Hf) Thin Films for micro- electro-mechanical systems and Bio-MEMS applications</i> Supervisors: Professor S.K. Sadrnezhaad (Sharif University of Technology) and Dr. Z. H. Barber (University of Cambridge-UK) Thesis grade: Excellent (20/20)
	<b>M.Sc. (1998-2000), Materials Science and Engineering, Sharif University of Technology, Tehran-Iran</b>  Thesis topic: Aluminized coatings for corrosion protection of nickel-base Superalloy RENE80 Supervisor: Dr. M. Ghorbani Thesis grade: Excellent(19/20)
	<b>B.Sc. (1994–1998), Materials Science and Engineering, Shiraz University, Shiraz- Iran (Top first among 40)</b>  B.Sc. Project: Analytical analysis of metal spinning(19.5/20) Supervisor: Professor M.M. Moshksar
<b>Awards and Achievements</b>	<b><u>World top one percent highly-cited scientists</u></b> , I was enlisted as world top one percent highly-cited scientists from data of Thomson-Reuters in 2015 announced by Iranian Ministry of Science, Research & Development.  <b><u>Top 100 researchers in Iran</u></b> , I was enlisted as top 100 among Iranian researchers in all

scientific researches. A grant was allocated to me from Scientific Deputy of Iranian Presidency in 2015.

**The UK Royal Society International Short Visits Award 2008**, Visiting at Cambridge University, Department of Materials Science and Metallurgy, Device Materials Group, from 1 July to 23 Sept. 2008.

**Scholarship from Iranian Ministry of Higher Education** to conduct one-year research, as a part of PhD degree, at Department of Materials Science and Metallurgy, University of Cambridge, 2004-2005.

**First Rank in Graduate Study** I have received the highest score in the national examination of entrance to master program of studies in all fields of Materials Science & Engineering in Iran, among 1318 applicants (B.Sc.), 1998.

**Conference Responsibility**

Organizer of the **First National Conference of Graduated Students in Nanotechnology-Iran**, 19-21 Feb 2006, Tarbiat Modares University, Tehran-Iran

**Teaching**

- The Science and Technology of Thin Films, PhD course, Tarbiat Modares University.
- Nanothermodynamics, MSc course, Tarbiat Modares University.
- Nanomaterials I, MSc and PhD courses, Tarbiat Modares University.
- Advanced Characterization of Materials, MSc course, Tarbiat Modares University.
- Nanomaterials II, MSc courses, Tarbiat Modares University.

**Students Supervision**

**Current MSc students(Supervising):**

- **A. Koravand (2012-2016):** Ni/GO electrodeposition by Ionic Liquids
- **M. Eilbeigi (2012-2016):** GO/Polyester self-repairing nanocoatings
- **A Salimi(2012-2016):** WC/Ni nanopowders

**Current PhD students**

- **M. Sheikhzadeh(2014-2018)-supervisor:** Nanostructure NiCuO<sub>4</sub> supercapacitor
- **S. Khabazian (2013-2017)-supervisor:** Nanocrystalline Diamond coating for dry gas seal components
- **M.R. Gorji(2012-2017)-supervisor:** High temperature nanocomposite coatings for

gas turbine blade repairing by laser infiltration

- **A Maleki (2011-2016)- supervisor:** Electrodeposition of NiMnGa shape memory nanowires
- **B. Koze Garkalchi, (2007-2011)-advisor:** TiO<sub>2</sub> nanoparticle synthesis

#### Graduated Students:

- **SA. Mosavi(2013-2015):** Ni/GO self-cleaning coatings
- **E. Noori (2013-2015):** WC/BNi<sub>2</sub> nanocoatings
- **MR Mohammadi (2012-2014):** Size effect on Ag-Cu phase diagrams
- **R. Rezanejhadi (2012-2014):** NiTi nanoparticle shape memory effect
- **H. Mikani (2012-2014):** TiC nanopowder
- **E. NoorMohamadi (2011-2013):** Electrodeposition of GO/TiO<sub>2</sub> thin films
- **H. Mehrabi(2011-2013):** ALD of TiO<sub>2</sub> thin films
- **SA Hossaini(2011-2013):** Electrodeposition of GO/Ni thin films
- **A. Tayefe(2010-2012):** Electrodeposition of nanostructure Al
- **H. Assadi (2009-2011):** Easy to clean coatings
- **M. Shaykhzade (2009-2011):** TiC/Steel nanocomposite for surface repairing
- **M. Delnavaz, Environmental Department(2007-2011)-advisor:** TiO<sub>2</sub> nanocoatings to recycle waterwaste
- **R. Fathi, (2008-2010):** Fabrication of shape memory nanowires
- **N. Bayat, (2008-2010):** Nanocontacting of nanowires to shape memory thin films
- **B. Abdolah, (2007-2009):** Self cleaning TiO<sub>2</sub> thin films by sputtering
- **S. Khabazian, (2007-2009):** CNT/Ni nanocoatings by electroplating
- **Morteza Torabi, MSc student of Iran University of Science and Technology (2007-2009):** Nanocomposites in Fuel Cell
- **Ali Safaei, MSc student (2006-2008: Graduated):** Melting temperature of metallic nanoparticles
- **Mohammad Attarian Shandiz, MSc student (2006-2008: Graduated):** Melting temperature modeling of nanosolids
- **Nahid Pirhady Tavandashti, MSc student (2006-2008: Graduated):** Self repairing nanocoatings for corrosion protection

- **Ameneh Ghasemi**, MSc student(**2006-2009: Graduated**): TiO<sub>2</sub>/CeO<sub>2</sub> layer(**Advisor**)
- **Kave Hajizadeh**, MSc student (**2005-2007: Graduated**): ECAP of 7075 Al alloy
- **Mohsen Motamedi**, MSc student (**2005-2007: Graduated**): Synthesis of high temperature Co-WC nanocomposite coatings by thermal spraying
- **Hamid Javadi**, MSc student (**2005-2007:Graduated**): Nanostructured TiO<sub>2</sub> self cleaning coatings based on sol gel route
- **Ehsan Saebnori**, MSc student (**2006-2008-Graduated**): Corrosion behavior of shape memory NiTi thin films (**Advising**)

## Publications

- K. Maleki , S.Sanjabi , Z.Alemipour AC electrodeposition of NiMn alloy nanowires in AAO template ***Journal of Modern Physics B*** 29(2015) 1550224.
- K. Maleki , S.Sanjabi , Z.Alemipour DC electrodeposition of NiGa alloy nanowires in AAO template ***Journal of Magnetism and Magnetic Materials*** 395 (2015) 289-293.
- S Sanjabi, A Obeydavi, Synthesis and characterization of nanocrystalline MgAl<sub>2</sub>O<sub>4</sub> spinel via modified sol-gel method ***Journal of Alloys and Compounds*** (2015) 645, 535-540
- E. Saebnoori, T. Shahrabi, S. Sanjabi, M. Ghaffari, Z.H. Barber Surface characteristics and electrochemical behaviour of sputter-deposited NiTi thin film, ***Philosophical Magazine*** 95(2015) 1696–1716.
- M. Delnavaz, B. Ayati, H. Ganjidoust, **S. Sanjabi**, Application of concrete surfaces as novel substrate for immobilization of TiO<sub>2</sub> nano powderin photocatalytic treatment of phenolic water ***JOURNAL OF ENVIRONMENTAL HEALTH SCIENCE & ENGINEERING*** 13 (2015) 58.
- S.A. Lajevardi, T. Shahrabi , J.A. Szpunar , A. Sabour Rouhaghdam, S. Sanjabi, Characterization of the microstructure and texture of functionally graded nickel-Al<sub>2</sub>O<sub>3</sub> nano composite coating produced by pulse deposition ***Surface and Coatings Technology*** 232(2012)851-859.
- V. Hasannaeimi, T. Shahrabi, S. Sanjabi, Fabrication of NiTi layer via co-electrodeposition of nickel and titanium ***Surface and Coatings Technology*** 210(2012)10-14.

- M. Delnavaz, B. Ayati, H. Ganjidoust, **S. Sanjabi**, Kinetic study of photocatalytic process for treatment phenolic wastewater by TiO<sub>2</sub> nanopowder immobilized on concrete surface, *Toxicological & Environmental Chemistry* 94 (2012) 1086-1098.
- N. Bayat, **S. Sanjabi**, Z.H. Barber, Growth of Copper nanowire arrays on NiTi thin films, *Surface and Coatings Technology* 257(2012)8493-8499.
- M.R. Gorji, **S. Sanjabi**, Z.H. Barber, Nanoindentation of ion implanted NiTi shape memory thin films, *Micro & Nanoletters* 7(2012)641-645.
- M. Sheikhzadeh, **S. Sanjabi**, Structural characterization of stainless steel/TiC nanocomposites produced by high-energy ball-milling method at different milling times, *Materials and Design* (2012).
- M.R. Gorji, **S. Sanjabi**, Corrosion behavior of ion implanted NiTi shape memory alloy thin films, *Materials Letters* 73 (2012) 179–182.
- A. Shirani, M. Momenzadeh, **S. Sanjabi**, Surfactant effect on electrochemical behavior of Co-TiO<sub>2</sub> nanocomposite coatings, *Surface & Coatings Technology* 206 (2012) 2870–2876.
- **S. Sanjabi**, N. Bayat, Thermodynamic modeling of particle formation and reshaping in metallic catalyst nanofilms for carbon nanotube growth, *Modelling Simul. Mater. Sci. Eng.* 20 (2012) 035002 (10pp).
- A. Faramarzi, **S. Sanjabi**, Stepwise melting model for formation of Ni catalyst particles for carbon nanotubes growth, *Journal of Physical Chemistry C* 115(2011)18958-18966.
- A. Fathi, **S. Sanjabi**, N Bayat, NiMn nanowires synthesis by electrodeposition in AAO, *Materials letters* 66(2012)346-348.
- A. Fathi, **S. Sanjabi**, Electrodeposition of nanostructure NiMn thin films, *Current Applied Physics* 12(2012)88-92.
- SK Sadrnezhaad, N Yasavol, M Ganjali, S Sanjabi, Property change during nanosecond pulse laser annealing of amorphous NiTi thin film **Bulletin of Materials Science**(2012) 35 (3), 357-364
- A Shirani, **S Sanjabi** The morphology and corrosion resistance of electrodeposited

Co-TiO<sub>2</sub> nanocomposite coatings, Materials and Corrosion(2012) 63 (8), 695-702

- M Momenzadeh, **S Sanjabi** The effect of TiO<sub>2</sub> nanoparticle codeposition on microstructure and corrosion resistance of electroless Ni-P coating, Materials and Corrosion(2012) 63 (7), 614-619
- B. Abdolahi, S.Sanjabi, V. Ahmadi, High transparent TiO<sub>2-x</sub>N<sub>x</sub>/TiO<sub>2</sub>/ZnO multi layer for photocatalytic application, Applied Surface Science 257(2011)10434-10442.
- BC Bayer, S Sanjabi, C Baehtz, CT Wirth, S Esconjauregui, Carbon nanotube forest growth on NiTi shape memory alloy thin films for thermal actuation, Thin Solid Films (2011) 519 (18), 6126-6129
- Behzad Koozegar Kaleji, Rasoul Sarraf-Mamoory , **Sohrab Sanjabi**, Photocatalytic evaluation of a titania thin film on glazed porcelain substrates via a TiCl<sub>4</sub> precursor, Reac Kinet Mech Cat (2011) 103:289–298.
- S. Khabazian, S. Sanjabi, Successful incorporation of multi-walled carbon nanotubes in nickel electrodeposited coating by electrophoresis, Applied Surface Science 257(2011)9366-9370.
- S. Khabazian, S. Sanjabi, The effect of multi-walled carbon nanotube pretreatments on the electrodeposition of Ni–MWCNTs coatings, *Applied Surface Science* 257(2011)5850-5856.
- N. Bayat, **S.Sanjabi**, Z.H. Barber, Improvement of corrosion resistance of NiTi sputtered thin films by anodization, Applied Surface Science 257(2011)8493-8499.
- B.Arab, S.Sanjabi, A. Shokuhfar, Size Dependency of Self-Diffusion and Creep Behavior of Nanostructured Metals, Materials Letters 65(2011)712-715.
- S Sanjabi Corrosion behavior of organically modified silicates coatings Anti-Corrosion Methods and Materials (2011) 58 (5), 245-249.
- B. Abdolahi, **S.Sanjabi**, V. Ahmadi, The effect of sputtering gas pressure on the morphology and photocatalytic activity of TiO<sub>2</sub> thin Vacuum 85(2010)400-405.
- B. Abdolahi, **S.Sanjabi**, V. Ahmadi, Optical and photocatalytic characteristics of

nitrogen doped TiO<sub>2</sub> thin film deposited by magnetron sputtering, *Scientia Iranica* 17(2010)102-107.

- N. Pirhady Tavandashti, **S.Sanjabi**, Corrosion study of hybrid sol-gel coatings containing boehmite nanoparticles loaded with cerium nitrate corrosion inhibitor *Progress in Organic Coatings, Progress in Organic Coatings* 69(2010)384-391.
- N. Pirhady Tavandashti, **S.Sanjabi**, T. Shahrabi Preparation and characterization of silica/epoxy hybrid nanocomposite coatings containing boehmite nanoparticles for corrosion protection, *Corrosion Science and Engineering* 46( 2011)261-266.
- A. Ghasemi, T. Shahrabi, A.A. Oskuie, H. Hasannejad and **S. Sanjabi**, Effect of heat treatment on corrosion properties of sol-gel titania-ceria nanocomposite coating, *Journal of alloys and Compounds* 504(2010)237.
- N. Pirhady Tavandashti, **S.Sanjabi**, T. Shahrabi Evolution of corrosion protection performance of hybrid silica based sol-gel nanocoatings by doping inorganic inhibitor, *Materials and Corrosion* 61(2010)9999-1.
- **S. Sanjabi**, Z.H. Barber, The effect of film composition on the structure and mechanical properties of NiTi shape memory thin films *Surface and Coatings Technology* 204(2010)1299.
- **S. Sanjabi**, A. Faramarzi, Z.H.Barber, Heterogeneous formation of Ni catalyst particles for carbon nanotubes growth, *Journal of Physical Chemistry C* 113(2009)8652-8659.
- N. Pirhady Tavandashti, **S.Sanjabi**, T. Shahrabi Corrosion Protection Evaluation of Silica/Epoxy Hybrid Nanocomposite Coatings to AA2024, *Progress in Organic Coatings*, 65(2009)182-186.
- S.K. Sadrnezhaad, E. Rezvani, **S. Sanjabi**, A.A. Ziae Moayed, Pulsed-Laser Annealing of NiTi Shape Memory Alloy Thin Film, *J. Mat. Sci. Tech.* 25/1(2009) 135-140.
- **S. Sanjabi**, M. Naderi, H. Zare Bidaki, S.K. Sadrnezhaad, Characterization of Sputtered NiTi Shape Memory Alloy Thin Films , *Scientia Iranica*, 16/3(2009)248-252.

- **S. Sanjabi**, A. Faramarzi, M. Hamdam Momen , Z.H.Barber, Thermodynamics approach of the formation of Ni catalyst particles for carbon nanotubes growth, *Journal of Physics and Chemistry of Solids* 69(2008)1940-1944.
- T. Shahrabi, **S.Sanjabi**, E. Saebnoori, Z.H. Barber, Extremely High Pitting Resistance of NiTi thin films in simulated body fluids, *Materials Letters*, 62(2008)2791-2794.
- M. Attarian, A. Safaei, **S.Sanjabi**, Z.H. Barber, Modeling of the melting temperature of nanoparticles by calculation of average coordination number and cohesive energy, *Solid State Communications*,145/9-10(2008)432-437.
- Y. Q. Fu, **S. Sanjabi**, Z. H. Barber, W. M. Huang, M.Cai, S. Zhang J. K. Luo, A. J. Flewitt, and W. I. Milne, In-Situ Observation of Transition Between Surface Relief and Wrinkling in Thin Film Shape Memory Alloys, *Journal of Nanoscience and Nanotechnology* 8/5(2008) 2588-2596.
- A J Muir Wood, **S Sanjabi**, Y.Q.Fu, Z H Barber and T W Clyne, Nanoindentation of Binary and Ternary Ni-Ti-based Shape Memory Alloy Thin Films, *Surface and Coatings Technology*, 202(2008)3115-3120.
- A. Safaei, M. Attarian, **S.Sanjabi**, Z.H. Barber, Modeling the melting temperature of nanoparticles by an analytical approach, *Journal of Physical Chemistry C* 112(2008)99-105.
- A. Safaei, M. Attarian, **S.Sanjabi**, Z.H. Barber, Modeling of the size effect on the melting temperature of nanoparticles, nanowires and nanofilms *Journal of Physics-Condensed Matter*19, 216216 (2007) 1-9.
- M. Attarian, A. Safaei, **S.Sanjabi**, Z.H. Barber, Modeling size dependence of melting temperature of metallic nanoparticles, *Journal of Physics and Chemistry of Solids*,68(2007)1396-1399.
- **S. Sanjabi**, S.K. Sadrnezhaad, Z.H.Barber Sputter alloying of Ni, Ti and Hf for fabrication of high temperature shape memory thin films, *Materials Science and Technology*,23/8(2007)987-991.
- M. Cai, Y. Q. Fu, **S. Sanjabi**, Z. Barber, and J.T. Dickinson: Effect of composition on

surface relief morphology in TiNiCu thin films, Surface and Coatings Technology, 201( 2007)5843-5849.

- Y.Q. Fu, S. **Sanjabi**, Z. Barber , W. Clyne , W. Huang, M. Cai , J. Luo , A. Flewitt and W.I. Milne, Wrinkling and surface relief in TiNiCu thin films, Applied Physics Letters, 89, 171922 (2006)1-5.
- **S. Sanjabi**, Y.Z. Cao, S.K. Sadrnezhaad, Z.H. Barber, Thin film processing of binary and ternary NiTi based shape memory thin films, Journal of Vacuum Science and Technology A, 23/ 5(2005) 1425-1430.
- **S. Sanjabi**, Y.Z. Cao, Z.H. Barber, Multi-gun sputter deposition of NiTi<sub>1-x</sub>Hf<sub>x</sub> thin films for high temperature microactuator applications, Sensors and Actuators A, 121/2(2005) 543-548.
- **S. Sanjabi**, S.K. Sadrnezhaad, K.A. Yates, Z.H. Barber, Growth and characterization of Ti<sub>x</sub>Ni<sub>1-x</sub> shape memory thin films using simultaneous sputter deposition from separate elemental targets, Thin Solid Films 491/1-2(2005) 190-196.

**Contribution to  
Conf. Proc.**

- **S. Sanjabi**, M.R.Gorji, Nanoindentation and Nanoscratching behaviours of ion implanted NiTi shape memory alloy thin film, Proceedings of the 4th International Conference on Nanostructures (ICNS4) 12-14 March, 2012, Kish Island, I.R. Iran.
- S. Khabazian, **S.Sanjabi**, M. Razaghi, Preliminary Study of Electrophoretic deposition of vertically aligned MWCNT on metallic electrode 2<sup>nd</sup> International Conference on Ultrafine Grained and Nanostructured Materials, University of Tehran Tehran, Iran. 14-15 Nov. 2009
- B. Abdolahi, **S.Sanjabi**, V. Ahmadi, Nanostructured photocatalytic TiO<sub>2</sub> thin film fabricated by magnetron sputtering on glass , 2<sup>nd</sup> International Conference on Ultrafine Grained and Nanostructured Materials, University of Tehran Tehran, Iran. 14-15 Nov. 2009
- **S.Sanjabi**, Mechanical study of NiTi shape memory thin films by nanoindentation, National Conference on Surface Engineering and Heat treatment, Isfahan University

of Technology, Isfahan-Iran, 2006, pp1539-1549.

- **S. Sanjabi**, S.K. Sadrnezhaad, Z.H. Barber, Fabrication of Ni<sub>50</sub>Ti<sub>50-x</sub>Hf<sub>x</sub> memory thin film using simultaneous sputter deposition from separated elemental targets, the International Conference on Shape Memory and Superelastic Technologies, **SMST 2006, California, USA**, 11-15 May 2006 (ASM International organization), 315-322.
- **S. Sanjabi**, S.K. Sadrnezhaad, Z.H. Barber, Fabrication and characterization of shape memory NiTi thin films for MEMS applications, First Tehran International Conference on Manufacturing Engineering, **TICME 2005**, 21-23 Dec. 2005.
- **S. Sanjabi**, S.K. Sadrnezhaad, Study of phase transformation, microstructural, and high temperature shape memory effect of NiTiHf thin films, Ninth Annual Meeting of Iranian Metallurgical Engineering Society, Shiraz University, Iran, 15-17 Nov.2005.
- **S. Sanjabi**, S.K. Sadrnezhaad, and Z.H. Barber, Fabrication of Ti<sub>x</sub>Ni<sub>1-x</sub> memory thin film using simultaneous sputter deposition from separated elemental targets, Presented and accepted for publication in the Conf. Proc. Of the International Conference on Shape Memory and Superelastic Technologies, **Baden Baden-Germany**, 2-7 Oct. 2004, pp435-440.
- **S. Sanjabi** and M.Ghorbani, Aluminizing of nickel-base superalloy RENE80, The Fifth Annual Meeting of Iranian Metallurgical Engineering Society, Tehran-Iran, 5-7 Nov 2001.
- S.Saeri, **S. Sanjabi**, The cracking of HP modified stainless tube in olefin unit, Steel 79, Ahvaz-Iran, 21-24 February 2001.

Conference  
Presentation

- K. Maleki , S.Sanjabi , Z.Alemipour DC electrodeposition of NiMnGa alloy nanowires in AAO template Nanostructures Conference Kish Islands 2016.
- H. Zare, M. Naderi, **S.Sanjabi**, Z.H. Barber, NiTi shape memory thin films for MEMS and BioMEMS, The First Nanotechnology Conference in Southern Prrt of Iran, Shiraz University, 12-15 Feb 2007.
- J.W. Muir, **S. Sanjabi**, Z.H. Barber, T.W. Clyne, Mechanical response of shape memory bulk and thin films, presented, **EOUROMAT 2005**, Sept. 2005, **Czech Republic**.
- **S.Sanjabi**, Z.H. Barber, Development and characterization of shape memory NiTiX (=Cu,Hf,...), Presented as a talk in *Gordon Lab. seminar series*, Department of Materials Science and Metallurgy, **University of Cambridge, UK**, 15 Oct. 2004.
- **S.Sanjabi**, Z.H. Barber and S.K. Sadrnezhaad, Fabrication of shape memory NiTi thin films, presented in the 12 Iranian Research Conferences in Europe (IRCE2004), **Manchester-UK**, 2-4 July 2004.
- **S.Sanjabi** and M.Ghorbani, Morphology of aluminized coatings, Conference Studentship of Materials Science, Sharif University of Technology, Tehran-Iran, 24-26 April 2001.
- **S.Sanjabi** and M.Ghorbani, Aluminizing of first stage aero gas turbine, Aerospace Conference 2000, Sharif University of Technology, Tehran-Iran,13-15 Jan 2000.

Working skills

I am able to work with the following equipment (trained in **Cambridge University-UK**).

- Ultra High Vacuum (UHV) sputtering (DC and RF)
- Profilometry
- Controlled temperature X-ray diffraction (Philips PW1030 and Siemens 500)
- SEM (Jeol 5800 LV and CamScan 2000X)
- Differential Scanning Calorimetry (DSC)(Q1000)
- Atomic Force Microscopy (AFM) (Nanoscope III)
- Nanoindentation (Micro-Material UK) (Berkovich and spherical tip)

**Work Experience**

- TEM (preliminary work on NiTi films).
- **Technical Advisor in Parto Company( Gas Turbine Blade Manufacturing) (2000-2003) Address: Pole Fardis, Janbe Niroghah Montazere Ghaem, Karaj-Iran**
  - ✓ Working on Reverse Engineering of GE frame 9, Siemens V94.2 blades and Vanes in Coating section.
  - ✓ Transferring of Know-How of the Coatings of mentioned parts from Elbar and Siemens Companies.
  - ✓ Establishing technical library for Parto Company
  - ✓ Preparing a technical report for Tavanir on Blade and Vane manufacturing
- **Iranian Institute of Petroleum (1998-1999)**

Investigation the cause of cracking of HP modified Olefin Tube in welding zones of Tabriz Petrochemical

**Peer Review**

- 1- Thin Solid Films**
- 2- Materials Science and Engineering A**
- 3- International Journal of Engineering (IRAN)**
- 4- Smart Structures**
- 5- Journal of Physical Chemistry**
- 6- Journal of Colloids, Surface and Interface**
- 7- Physics and Chemistry of Materials**
- 8- Physica D**
- 9- Surface and Coatings Technology**
- 10- Vacuum**

**Industrial projects**

- " Know how of manifesting extruder cutter blades of Marun Petrochemical company" 1.5.2009 to 1.5.2010

**Laboratory**

**Nanomaterials lab.**

- 1-Sol gel facilities,
- 2- DC and AC Electrodeposition,
- 3- Tube furnace (1500C) for nanotube growth and heat treatment,
- 4-Vacuum Furnace (up to 1500C)
- 4- Planetary milling under controlled atmosphere
- 5- Sonicator,.....