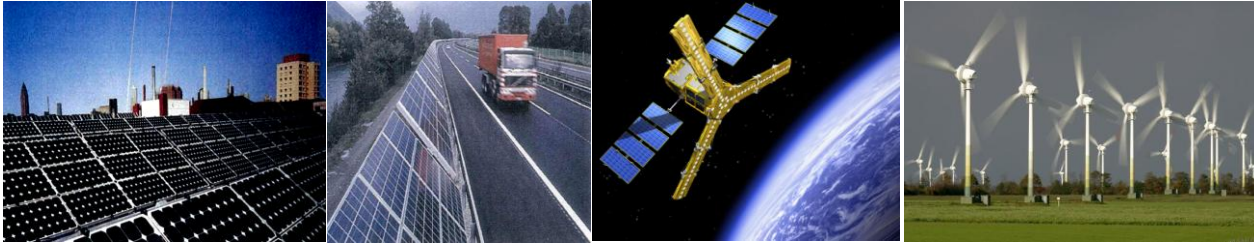




## Electrical and Computer Engineering Department of Tarbiat Modares University



**Reza Beiranvand** (SM'08–M'12) received the M.Sc. and Ph.D. degrees in Electrical Engineering (Electronics) from Sharif University of Technology, Tehran, Iran, in 1999 and 2010, respectively.

From 2010 to 2012, he was a Postdoctoral Research Fellow with the Electrical Engineering College, Sharif University of Technology, Tehran, Iran. From 1999 to 2007, he was an engineer at R&D centers of PARS-Electric and SHAHAB MFGs, Tehran, where he was engaged in designing the CRT, LCD, and LED TVs based on the ST and NXP semiconductors, and also on high power factor resonant converters for ballasts and LED applications.

Since 2012, he has been with the Faculty of Electrical and Computer Engineering, Tarbiat Modares University, Tehran, Iran, where he is currently an assistant Professor. His current research interests include SMPS, modeling and control of the power electronics converters, resonant converters and soft switching techniques, switched-capacitor converters, electromagnetic devices, and PV-based renewable energy systems.

## CONTACTS:

Room 6/910, 9<sup>th</sup> Floor, Electrical and Computer Engineering Department, Tarbiat Modares University, Jalal AleAhmad Nasr, Tehran, Iran  
P. O. Box: 14115-111

**Phone: +98-21-8882-4344**

**Fax : +98-21-8882-4325**

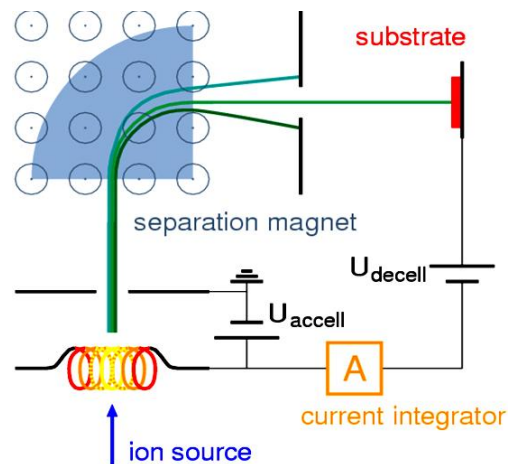
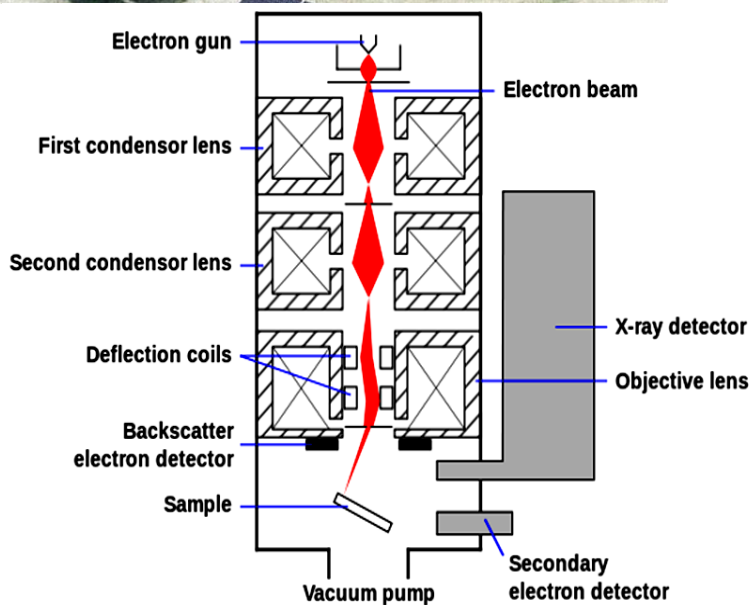
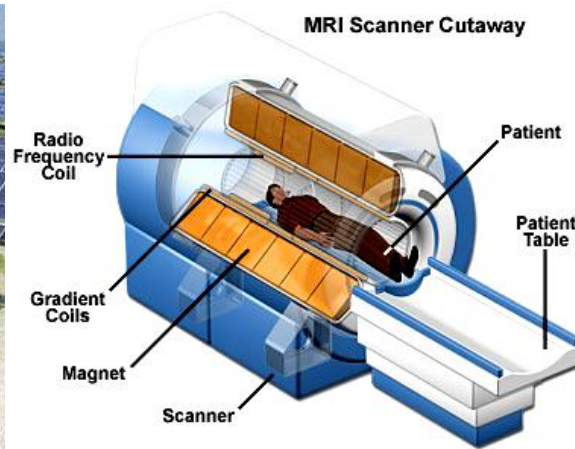
**E-Mail: [beiranvand@modares.ac.ir](mailto:beiranvand@modares.ac.ir) , [r.beiranvand@yahoo.com](mailto:r.beiranvand@yahoo.com)**

**Homepage: <http://www.modares.ac.ir/~beiranvand>**

## Scientific Societies:

- IEEE Industrial Electronics Society
- IEEE Power Electronics Society
- IEEE Magnetics Society

# SOME TYPICAL INDUSTRIAL EXPERIENCES AND RESEARCH INTERESTS:



# ACADEMIC EXPERIENCES:

## 1) COURSES:

No.	Title
1	<b>Switched-Mode Power Supplies (SMPS) and Their Applications</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University
2	<b>Resonant Converters and Soft Switching Techniques</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University
3	<b>Modeling and Control of the Power Electronics Converters</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University
4	<b>Quasi-Resonant and Resonant Switched-Capacitor Converters</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University

## 2) PUBLICATIONS:

### 2-a) Books

No.	Title	Year

### 2-b) Publications in International Refereed Journals:

No.	Title	Year
1	<b>Designing an Adjustable Wide Range Regulated Current Source</b> <b>R Beiranvand</b> , B Rashidian, MR Zolghadri, SMH Alavi <b>Power Electronics, IEEE Transactions on</b> 25 (1), 197-208	2010
2	<b>Optimizing the Normalized Dead-Time and Maximum Switching Frequency of a Wide-Adjustable-Range LLC Resonant Converter</b> <b>R Beiranvand</b> , B Rashidian, MR Zolghadri, SMH Alavi <b>Power Electronics, IEEE Transactions on</b> 26 (2), 462-472	2011

No.	Title	Year
3	<p>Using LLC Resonant Converter for Designing Wide-Range Voltage Source  <b>R Beiranvand</b>, B Rashidian, MR Zolghadri, SMH Alavi  <b>Industrial Electronics, IEEE Transactions on</b> 58 (5), 1746-1756</p>	
4	<p>Optimizing the LLC–LC Resonant Converter Topology for Wide-Output-Voltage and Wide-Output-Load Applications  <b>R Beiranvand</b>, MR Zolghadri, B Rashidian, SMH Alavi  <b>Power Electronics, IEEE Transactions on</b> 26 (11), 3192-3204</p>	
5	<p>A design Procedure for Optimizing the LLC Resonant Converter as a Wide Output Range Voltage Source  <b>R Beiranvand</b>, B Rashidian, MR Zolghadri, SMH Alavi  <b>Power Electronics, IEEE Transactions on</b> 27 (8), 3749-3763</p>	2012
6	<p>Analyzing the Uniformity of the Generated Magnetic Field by a Practical One-Dimensional Helmholtz Coils System  <b>R Beiranvand</b>  <b>Review of Scientific Instruments</b> 84 (7), 075109-1- 075109-12</p>	3013
7	<p>Novel Zero-Voltage-Switching Bridgeless PFC Converter  R Haghi, MR Zolghadri, <b>R Beiranvand</b>  <b>Journal of Power Electronics</b> 13 (1), 40-50, 2013</p>	
8	<p>Magnetic Field Uniformity of the Practical Tri-Axial Helmholtz Coils Systems  <b>R Beiranvand</b>  <b>Review of Scientific Instruments</b> 85 (5), 055115-1-055115-10</p>	2014
9	<p>New Strategy of Grid Connected Photovoltaic System Using Module Integrated Converters with B4 Inverter to Overcome Partial Shading Effect  R. Rezaii, M. A. Abolhasani, A. Yazdian Varjani, and <b>R. Beiranvand</b>  <b>International Journal of Smart Electrical Engineering</b> 3 (3), 149-155, 2014</p>	2014
10	<p>Analysis of a Switched-Capacitor Converter Above its Resonant Frequency to Overcome Voltage Regulation Issue of Resonant SCCs  <b>R. Beiranvand</b>  <b>Industrial Electronics, IEEE Transactions on</b>, 63 (9), 5315-5325, 2016  <b>DOI: 10.1109/TIE.2016.2561270</b></p>	2016
11	<p>Analyzing a Resonant Switched-Capacitor Converter for Improving Lithium-Ion Battery Cells Balancing Speed  S Goodarzi, <b>R Beiranvand</b>, and M Mohamadian  <b>Modares Journal of Electrical Engineering</b> 14 (1), 48-57, 2016</p>	

No.	Title	Year
12	<a href="#">A New Family of Multi-Input Converters Based on Three Switches Leg</a> M Azizi, M. Mohamadian, and <b>R Beiranvand</b> <b>Industrial Electronics, IEEE Transactions on</b> , 63 (11), 6812 – 6822, 2016	
13	<a href="#">A Single-Stage AC Module with Series Power Decoupling Capability for Connecting PV to a Single-Phase Power Grid</a> M. Zare JamalAbadi, M. Mohamadian, and <b>R. Beiranvand</b> <b>IET Power Electronics</b> , DOI: 10.1049/iet-pel.2016.0349, 2016	
14	<a href="#">A Single-Phase Grid-Connected Photovoltaic Inverter Based on a Three-Switch Three-Port Flyback with Series Power Decoupling Circuit</a> M. Zare JamalAbadi, M. Mohamadian, and <b>R. Beiranvand</b> <b>Industrial Electronics, IEEE Transactions on</b> , 63 (9) DOI: 10.1109/TIE.2016.2620100	
15	<a href="#">Optimal Utilization of the Delta Conversion UPS</a> S. M. R. Movahed, M. Mohamadian, A. Yazdian Varjani, and <b>R. Beiranvand</b> <b>Modares Journal of Electrical Engineering</b> (),-, 2017	
16	<a href="#">Regulating the Output Voltage of the Resonant Switched-Capacitor Converters below Their Resonant Frequencies</a> <b>R. Beiranvand</b> <b>Industrial Electronics, IEEE Transactions on</b> , (),-, 2017 DOI:	2017

## 2-c) Publications in International Refereed Conferences

No.	Title	Year
24	<a href="#">Analysis of the boost converter under the DCM condition to reduce the MIC volume to mitigate partial shading effects in PV arrays</a> R. Rezaii, M. A. Abolhasani, A. Yazdian Varjani, and <b>R. Beiranvand</b> Power Electronics and Drive Systems Technologies Conference (PEDSTC), 2016	2016
23	<a href="#">A comparison between buck and boost topologies as module integrated converters to mitigate partial shading effects on PV arrays</a> M. A. Abolhasani, R. Rezaii, <b>R. Beiranvand</b> , and A. Yazdian Varjani	

No.	Title	Year
	Power Electronics and Drive Systems Technologies Conference (PEDSTC), 2016	
22	<p>A high step-up switched-capacitor converter with zero current switching technique for using in solar system applications</p> <p>S. M. Mousavi, R. Rezaii, <b>R. Beiranvand</b>, and A. Yazdian Varjani</p> <p>Power Electronics and Drive Systems Technologies Conference (PEDSTC), 2016</p>	
21	<p>Designing and implementing of a novel resonant switched-capacitor converter for improving balancing speed of lithium-ion battery cells</p> <p>S. Goodarzi, <b>R. Beiranvand</b>, R. Rezaii, M. A. Abolhasani, and M. Mohamadian</p> <p>Power Electronics and Drive Systems Technologies Conference (PEDSTC), 2016</p>	
20	<p>New Strategy of Grid Connected Photovoltaic System Using Module Integrated Converters with B4 Inverter to Overcome Partial Shading Effect</p> <p>R. Rezaii, M. A. Abolhasani, A. Yazdian Varjani, and <b>R. Beiranvand</b></p> <p>30th Power System Conference - 2015 Tehran, Iran, 1-6</p>	
19	<p>Switched-Capacitor Micro-Inverter for Connecting PV to Single Phase Power Grid</p> <p>M. Hadi Zare, M. Mohamadian, and <b>R. Beiranvand</b></p> <p>2nd International Conference and Exhibition on Solar Energy (ICESE)2015</p>	
18	<p>Optimization the LLC resonant converter for achieving maximum efficiency at a predetermined load value</p> <p>M. Jami, <b>R. Beiranvand</b>, M. Mohamadian, and M Ghasemi</p> <p>Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 2015</p>	
17	<p>High efficiency, low size, and low weight vehicle battery charger</p> <p>A Golahmar-Zavare, M Mohamadian, and <b>R. Beiranvand</b></p> <p>Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 2015</p>	2015
16	<p>A new algorithm for increasing balancing speed of switched-capacitor lithium-ion battery cell equalizers</p> <p>S. Goodarzi, <b>R. Beiranvand</b>, S. M. Mousavi, and M. Mohamadian</p> <p>Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 2015</p>	
15	<p>Analyzing a bridgeless single stage LLC resonant PFC converter controlled by frequency and pulse width modulations techniques</p> <p>M. Ghasemi, <b>R. Beiranvand</b>, and M Jami</p> <p>Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 2015</p>	
14	<p>A novel switching pattern for switching loss reduction of an IPT-based single to three-phase cycloconverter</p> <p>S Sahraneshin, MH Ameri, A Yazdian Varjani, and <b>R. Beiranvand</b></p> <p>Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 281 - 286</p>	



No.	Title	Year
13	<p><a href="#">Designing A 48 V to 24 V DC-DC converter for vehicle application using a resonant switched capacitor converter topology</a>  S. M. Mousavi, <b>R. Beiranvand</b>, S. Goodarzi, and M. Mohamadian  Power Electronics, Drives Systems &amp; Technologies Conference (PEDSTC), 263 - 268</p>	
12	<p><a href="#">Optimizing the LLC Resonant Converter to Achieve Maximum Efficiency for a Desired Load (printed in Persian)</a>  M. Jami, <b>R Beiranvand</b>, M Mohamadian, M. Ghasemi, M. Mohammadi  6<sup>th</sup> Iranian Conference on Electrical &amp; Electronics Engineering (ICEEE) 19-21 Aug. Iran</p>	
11	<p><a href="#">Design and Simulation of an Optimum PV Water Pumping System by Using a High Step-up dc-dc Converter (printed in Persian)</a>  S khoshnoud, M Mohamadian, <b>R Beiranvand</b>, A Golahmar Zavarel  4th Annual Clean Energy Conference (ACEC2014), Jan. 25-26, Iran</p>	
10	<p><a href="#">Designing a Single Stage PFC Converter Based on the LLC Resonant Converter (printed in Persian)</a>  M. Ghasemi, <b>R Beiranvand</b>, A Yazdian Varjani, M. Jami  4th Annual Clean Energy Conference (ACEC2014), Jan. 25-26, Iran</p>	2014
9	<p><a href="#">SEPIC Converter with Power Factor Correction for Designing Electric Vehicle On-board Battery Charger (printed in Persian)</a>  A Golahmar Zavarel, M Mohamadian, <b>R Beiranvand</b>, S khoshnoud  4th Annual Clean Energy Conference (ACEC2014), Jan. 25-26, Iran</p>	
8	<p><a href="#">Pulse Width and Frequency Modulations for Controlling the LLC Resonant Converter for Using in Photovoltaic and Battery Charger Applications (printed in Persian)</a>  M. Ghasemi, <b>R Beiranvand</b>, A Yazdian Varjani, M. Jami  4th Annual Clean Energy Conference (ACEC2014), Jan. 25-26, Iran</p>	
7	<p><a href="#">Analyzing the LLC Resonant Converter by Considering the Parasitic Components for High Frequency Applications (printed in Persian)</a>  M. Jami, <b>R Beiranvand</b>, M Mohamadian  6<sup>th</sup> Iranian Conference on Electrical &amp; Electronics Engineering (ICEEE) 19-21 Aug. Iran</p>	
6	<p><a href="#">Using Battery-Supercapacitor Energy Storage Hybrid System in a 30 kVA Uninterruptable Power Supply (printed in Persian)</a>  T. Parnian, M Mohamadian, <b>R Beiranvand</b>  28<sup>th</sup> International Power System Conference 4-6 Nov. Tehran-Iran</p>	2013
5	<p><a href="#">Dual-input single-output DC-DC-AC converter</a>  M Azizi, M Mohamadian, <b>R Beiranvand</b>, A Rajaei  Power Electronics, Drive Systems and Technologies Conference (PEDSTC)</p>	

No.	Title	Year
4	<a href="#">A novel zero-voltage-transition bridgeless PFC with reduced conduction losses</a> R Haghi, MR Zolghadri, <b>R Beiranvand</b> Power Electronics, Drive Systems and Technologies Conference (PEDSTC), 2011	2011
3	<a href="#">Wide adjustable range LLC resonant converter's maximum switching frequency for realizing the ZVS operation</a> <b>R Beiranvand</b> , B Rashidian, MR Zolghadri, MH Alavi 2010 18th Iranian Conference on Electrical Engineering, 745-752, 2010	2010
2	<a href="#">Design and Implementing the PFC Stage of the Ion Implanter Filament and Arc Power Supplies</a> (printed in Persian) <b>R Beiranvand</b> , B Rashidian, MR Zolghadri, MH Alavi Electrical Engineering (ICEE), 2009 17th Iranian Conference on, 25-32, 2009	2009
1	<a href="#">Design and Implementing a 1 kW, 220 V Sinusoidal 50 Hz Inverter by Using SPWM and UPWM Approaches</a> (printed in Persian) <b>R Beiranvand</b> , MH Alavi Electrical Engineering (ICEE), 2000 8th Iranian Conference on, 432-438	2000

### 3) PhD Dissertation:

#### 3-a) Supervisor

No.	Title	Year
2	“ ” R. Haghi, Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, 2016-	2016-
1	“ ” Mahdi Ghasemi, Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, 2015-	2015-

#### 3-b) Advisor

No.	Title	Year
2	<a href="#">Introducing a New Family of Partial Resonance bi-directional ac Link Inverters with Soft</a>	2017



No.	Title	Year
	<a href="#">Switching Operation for Connecting to Utility Grid</a> Mohamad Hadi Zare Jamalabadi, M. Mohamadian, <b>R Beiranvand</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Winter 2017	
1	<a href="#">Design and Implementation of New Family of Converters with Multiple DC Input and Single Output</a> Mahdi Azizi, M. Mohamadian, <b>R Beiranvand</b> Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Spring 2016	2016

#### 4) Master Thesis:

##### 4-a) Supervisor

No.	Title	Year
7	<a href="#">Optimization and Implementation of a Single Stage PFC Based on the LLC Resonant Converter</a> Sadegh Esmailirad, <b>R Beiranvand</b> , A. Yazdian Varjani Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Jan. 2017	2017
6	<a href="#">Design and Implementation of a Module Integrated Converter to Mitigate the Partial Shading Effects on Photovoltaic Arrays with Zero Voltage Switching</a> Mohammad Amin Abolhasani, <b>R Beiranvand</b> , A. Yazdian Varjani Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Nov. 2015	
5	<a href="#">Design and Implementation of a Switched-Capacitor Converter for using in Electrical Vehicle Application</a> Seyed Mohammad Mousavi, <b>R Beiranvand</b> , M. Mohamadian Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Nov. 2015	2015
4	<a href="#">Implementation and Analyzing the Voltage Balancing Circuit of the Series Rechargeable Batteries Cells</a> Shahin Goodarzi, <b>R Beiranvand</b> , M. Mohamadian Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Sep. 2015	
3	<a href="#">Improving the LLC Resonant Converter Performances Under the Light and no Load Conditions</a> Masoud Mohammadi, <b>R Beiranvand</b> , M. Mohamadian Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Feb. 2014	2014
2	<a href="#">Designing a Single Stage LLC Resonant Converter for Using in LED/LCD TV Applications</a> Mahdi Ghasemi, <b>R Beiranvand</b> , A Yazdian Varjani Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Nov. 2014	

No.	Title	Year
1	<p><a href="#">State-Space Analysis of the LLC Resonant Converter for High Frequency Applications</a>  Mehran Jami, <b>R Beiranvand</b>, M Mohamadian  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University</p>	

#### 4-b) Advisor

No.	Title	Year
8	<p><a href="#">Design and construction of LED driver for lighting application</a>  Mohammad Pourfathollah, A Yazdian Varjani, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Winter 2016</p>	2016
7	<p><a href="#">Implementation and Analyzing a Photovoltaic System Based on the Micro Inverters to Supply a Single Load for Reducing the Partial Shading Effect</a>  Reza Rezaii, A Yazdian Varjani, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Autumn 2015</p>	2015
6	<p><a href="#">Design and Implementation of Control Electronic Platform for NPC Multilevel UPS Based on Hybrid DSP-FPGA Architecture</a>  Reza Kheirollahi, M Mohamadian, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Dec. 2015</p>	
5	<p><a href="#">Design, Optimization and Implementation of a High Power Factor Electronic Ballast with Luminance Control without Dimmer</a>  Omid Honarfar, A Yazdian Varjani, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Summer 2015</p>	
4	<p><a href="#">Design and Implementation of an Optimum PV Water Pumping System</a>  Sajjad khoshnoud, M Mohamadian, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Nov. 2014</p>	2014
3	<p><a href="#">Design and Implementation of a Converter for Optimizing the Vehicle Battery Charger</a>  Alireza Golahmar Zavarel, M Mohamadian, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Nov. 2014</p>	
2	<p><a href="#">Hybrid Battery – Supercapacitor Energy Storage System for a Uninterruptible Power Supply</a>  Toofan Parnian, M Mohamadian, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, March 2014</p>	
1	<p><a href="#">IPT-Based Single to Multi-Phase AC/AC Frequency Converters</a>  Sohrab Sahraneshin Samani, A Yazdian Varjani, <b>R Beiranvand</b>  Faculty of Electrical and Computer Engineering (ECE), Tarbiat Modares University, Sep. 2013</p>	2013

