

# **2017 IEEE VI Forum Strategic Partnership of Universities and Enterprises of Hi-Tech Branches (Science. Education. Innovations) (SPUE 2017)**

**Saint Petersburg, Russia  
15-17 November 2017**



**IEEE Catalog Number: CFP17AWR-POD  
ISBN: 978-1-5386-2572-9**

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP17AWR-POD
ISBN (Print-On-Demand):	978-1-5386-2572-9
ISBN (Online):	978-1-5386-2571-2

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Content

Preface .....	2
<i>Digital Transformation of Engineering Education</i>	
Gaivoronskii D.V., Kutuzov V.M., Minina A.A. ....	3
<i>Training of Top-Class Professionals in the Field of Digital Economy Hardware and Software Platform</i>	
Peshekhonov V.G., Gutner I.E., Kolesov N.V., Belyaev Ja.V., Kutuzov V.M., Kupriyanov M.S., Bureneva O.I. ....	7
<i>Personnel for Digital Production of Information Systems for Monitoring Water Areas</i>	
Polkanov K.I., Seleznev I.A., Liss A.R., Kupriyanov M.S., Shichkina Y.A. ....	11
<i>Integration of Employers into the University's Information Systems for Monitoring of Target Students' Education and Staff Search</i>	
Sheludko V.N., Minina A.A., Kukaev A.S., Makin V.A., Kuznetsov A.A. ....	14
<i>Improving the Teaching Quality with a Smart-Education System</i>	
Glukhov V.V., Vasetskaya N.O. ....	17
<i>Engineering Economics in Personnel Training for Industry Modernization in St. Petersburg</i>	
Yutlandova S.A., Trachenko E.A., Karlik A.E., Veig N.I. ....	22
<i>Exploiting Opportunities for Strategic Partnership with Enterprises during the Educational Process Design at the Faculty of Information Measurement and Biotechnical Systems of ETU «LETI»</i>	
Boronachin A.M., Larionov D.Yu., Podgornaya L.N., Shalymov R.V. ....	25
<i>Professionalization of Education within the Digital Economy and Communicative Competencies</i>	
Trostinskaia I.R., Safonova A.S., Pokrovskaya N.N. ....	29
<i>The Employers Participation in the Assessment of Educational Programs and Graduate Training</i>	
Afanaseva E.A., Ivanov A.S., Yankevich V.B. ....	33
<i>Assessment of the Quality of Students Training for IT-departments</i>	
Orlov S.P., Melnikova D.A., Zadorozhny A.M., Sarbitova Y.V., Bochkarev D.V. ....	35
<i>Planning and Training for the Cars Industrial Cluster of St. Petersburg and Related Organizations</i>	
Ignatyev M.B., Makin P.I., Iakovleva E.A. ....	38
<i>Integrated System for Design and Products Quality Control based on Additive Technologies for High-tech Industries</i>	
Chistyakova T.B., Polosin A.N., Novozhilova I.V. ....	41
<i>Technological Docflow for Vendors of Energy and Automated Products: Information System and Study Case</i>	
Petrochenkov A.B., Khudorozhkova M., Lyakhomskii A. ....	44
<i>Staffing in the Sphere of Trade: the Main Issues and Prospects of Solution</i>	
Krasyuk I.A., Bakharev V.V., Kozlova N.A., Mirzoeva D.D. ....	48
<i>The Impact of NBIC-Technology Development on Engineering and Management Personnel Training</i>	
Volkova V.N., Kozlov V.N., Karlik A.E., Iakovleva E.A. ....	51
<i>Training of Quality Managers as Part of Solving the Problem of Import Substitution</i>	
Viryansky Z.Ya., Semenov V.P., Shaposhnikov S.O. ....	55
<i>Main Trends in Forming and Pursuing Human Resource Policies at an Industrial Enterprise</i>	
Airapetova A.G., Korelin V.V., Karabekova A.A., Sobolev R.K. ....	58
<i>Problems of Creation of Patent Landscapes of the Companies</i>	
Brusakova I.A., Kustov T.V., Shepelev R.E. ....	60
<i>Corporate Information System – Element of Efficient Human Resources Management of the Industrial-Economic Complex</i>	
Vinogradova E.Yu., Babkin A.V., Andreeva S.L., Galimova A.I. ....	63
<i>Enhancing Personnel Training for the Industrial and Economic Complex in the Conditions of the Digital Economy</i>	
Kuladzhii T.V., Babkin A.V., Murtazaev S-A. Yu. ....	67
<i>About Interaction of Higher Education Institutions and Productions</i>	
Brusakova I.A., Chertovskoy V.D. ....	71
<i>Digitizing of Regulative Mechanisms on the Masterchain Platform for the Individualized Competence Portfolio</i>	
Feng Wei, Pokrovskaya N.N. ....	73
<i>Information Environment for the Training of Highly Qualified Personnel in the System of Continuous Education</i>	
Verkhova G.V., Akimov S.V., Gusev A.N. ....	77

<i>Scientific and Technical Cooperation with the Enterprises of Electronic Industry of Saint-Petersburg in the Field of Vacuum and Plasma Technologies</i>	
Lisenkov A.A., Gryaznov A.Yu., Potrakhov N.N., Kostrin D.K., Simon V.A., Uhov A.A. ....	81
<i>Prospects of Technological Development of Industry on the Basis of Interaction between Universities and Industrial Enterprises</i>	
Babikova A.V., Kaplyuk E.V. ....	84
<i>Collaboration with Employers in IT Training</i>	
Loginova A.V., Algazinov E.K., Garshina V.V., Sychev A.V., Desyatirikova E.N., Smoljyaninov A.V. ....	88
<i>Evaluation of the Effectiveness of Various Forms of Interaction Between University and Enterprises</i>	
Fedosova T.V., Morozova T.V. ....	92
<i>Classification of Modern Educational Programs by Functional Purpose</i>	
Ilyushin Y.V., Kivayev I.N., Novozhilov I.M. ....	96
<i>The Improvement of Municipal Budget Financing Mechanisms by using the Property of Municipal Public Institutions</i>	
Sokolitsyn A.S., Leont'ev D.N., Ivanov D.V., Semenov V.P. ....	100
<i>Electronic Learning as the Condition of Improvement in Quality of Learning of Engineering and Economic Personnel</i>	
Bataev A.V. ....	103
<i>Practice-Oriented Online-Courses as a Factor of Increasing the Quality of Engineering and Economic Education</i>	
Bataev A.V. ....	107
<i>Analysis of University and Business Cooperation Models in Europe</i>	
Viktorova E.V. ....	111
<i>Innovative Activity as a Basis for Successful Partnership of Business and Education Spheres</i>	
Zvyagin L.S. ....	114
<i>Key Aspects of Modern Partnership of Business and Education Organizations</i>	
Zvyagin L.S. ....	118
<i>Management System Business Process as a Model for the Training of Industrial Enterprises</i>	
Krymov S.M., Kapustina I.V., Kolgan M.V. ....	122
<i>Improving the Quality of Training Specialists in Subsoil Use at the Expense of Introduction of Automated Training Systems</i>	
Ilyushin Y.V., Kivayev I.N., Novozhilov I.M. ....	125
<i>Graduates' Employment: Expectations and Reality</i>	
Baskakova D.Yu., Belash O.Yu., Shestopalov M.Yu. ....	128
<i>Formation of Regional Infrastructure of the National System of Qualifications in High-Tech Industries</i>	
Volkov A.G., Komarov B.G., Kustov T.V. ....	132
<i>Evaluation of Interaction between Russian Universities and Foreign Universities</i>	
Golovin N.M., Skripnuk D.F., Klochkova E.S., Alasas B.M., Chernyshov M.O., Kireev V.V. ....	134
<i>Assessment of the Quality of Higher Professional Education on the Basis of Professional and Social Accreditation</i>	
Klochkova E.S., Alasas B.M., Esedulaev R.R., Tveryakov A.M., Vasilyev D.V., Krayneva R.K. ....	137
<i>Planning of Production Processes for Agricultural Enterprises using Joint Competences of University and IT company in Development of Knowledge Bases</i>	
Skobelev P.O., Budaev D.S., Voshchuk G.Yu., Mochalkin A.N., Susarev S.V., Gubanov N.G. ....	141
<i>Designing a Multi-Service Internet Platform for Managing an Agricultural Enterprise: Searching for an Innovative Solution during Joint Work of a University and an IT company</i>	
Skobelev P.O., Budaev D.S., Voshchuk G.Yu., Mochalkin A.N., Susarev S.V., Gubanov N.G. ....	144
<i>Implementation of Additional Training Profiles «LETI minor»: Using Online Courses</i>	
Timofeev A.V., Tokarev N.V., Petrova K.A. ....	147
<i>Automated Support System for Training Specialists Based on Knowledge Domains Thesauri</i>	
Kotova E.E., Pisarev I.A. ....	N/A
<i>Overview of Groups Forming Methods for Long Student's Project</i>	
Minav T.A., Stotskaya A.D. ....	153
<i>Ensuring Quality of Prepare of Graduates</i>	
Kozlova L.P., Kozlova O.A. ....	156
<i>Problems of Training of Highly Qualified Specialists</i>	
Kozlova L.P., Kozlova O.A. ....	159
<i>Employment and Professional Adaptation of Specialists</i>	
Klochkov Yu.S., Didenko N.I., Makov K.M., Zapivahin I.O., Ostapenko M.S., Volgina A.D. ....	162

<i>Professional Orientation of Students</i>	
Klochkov Yu.S., Lepehin A.I., Vasilega D.S., Vasilega N.A., Nonieva K.Z., Vasilyeva S.E.	165
<i>Specifics of Human Resource Policies at Various Life Stages of an Enterprise</i>	
Airapetova A.G., Korelin V.V., Karabekova A.A.	169
<i>The Main Forms of Interaction between Universities and Industrial Enterprises in the Formation of a Regional Innovation Infrastructure</i>	
Kossukhina M.A.	172
<i>Improving the Management of the Activities of Small Innovative Enterprises in the Implementation of the Technology Consulting</i>	
Lashmanova N.V., Kossukhina M.A., Syrovatskay O.Y.	175
<i>The Practice-oriented Approach to the Teaching of Economic Disciplines in the Training of Technical Specialists</i>	
Semenov V.P.	177
<i>Vertical Training System as the Basis for the Development of Regional Business Systems</i>	
Babkin I.A., Yuschenko A.L., Babkina O.M.	181
<i>Collaboration Between Universities and University-Business Cooperation as a Factor of Growth in Education Exports in the Context of Import Substitution</i>	
Zashchitina E.K., Bondarev M.G., Pavlov P.V., Pavlov A.Y.	185
<i>Creation of the Knowledge Management System to Increase the Competitiveness of the IT Company</i>	
Fomina I.G., Zvontsov A.V.	189
<i>Modern Approaches to the Educational Process Aimed at Improving the Quality of Highly Qualified Personnel Training</i>	
Necheukhina N.S., Babkin I.A., Matveeva V.S., Makarova E.N.	192
<i>Problems of Forming Requirements to Training of Specialists for Industrial and Economic Complex</i>	
Gazizulina A.Yu., Mirolyubova O.V., Konakhina N.A., Kikkas K.N., Grigorieva A.A., Danilova S.Yu.	196
<i>Reducing the Risk of Staff Failures</i>	
Gazizulina A.Yu., Krasulina O.Yu., Borremans A.D., Tveryakov A.M., Ostapenko M.S., Vasilyeva S.E.	199
<i>Formation of a Complex of Indicators for Assessing High-Tech Import Substitution Projects</i>	
Samonova C.V., Pavlov A.Ya., Kobets E.A., Ogurtsov E.S.	202
<i>Federal University Public Department as an Instrument of Higher Education Quality Assessment by Professional Community</i>	
Zanina L.V., Kirik V.A., Bondarev M.G., Zashchitina E.K.	205
<i>The Professional Adaptation of Linguists to the Tasks of Analysis and Synthesis of Natural Languages</i>	
Ulianitckaia L.A., Shumkov A.A.	208
<i>The Issues of Engineering Economic Education for Digital Economy</i>	
Varshavskaya V.V., Tikhonova M.V., Komarov A.G., Tishkov P.I.	211
<i>Higher Educational Institutions Functioning Assessment and Quality Management under the Conditions of Globalization</i>	
Davliatova M.A., Starodubtsev Yu.I.	215
<i>Adaptive Techniques in Hydroacoustic Monitoring</i>	
Klionskiy D.M., Kaplun D.I., Romanov S.A.	218
<i>Theoretical Model of Tunable Optoelectronic Oscillator</i>	
Vitko V.V., Nikitin A.A., Ustinov A.B., Kalinikos B.A.	220
<i>Development of Software Simulator of UAV Flight for the Studies of Trajectory Motion Systems</i>	
Filatov D.V., Devyatkin A.V., Polyakov N.D.	224