

## Research focus and reference publication channels

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The purpose of this document is twofold:

- To give a synthetic overview of the main current thematic research areas of the department.
- To provide a guiding reference in terms of “quality channels” for publication of research results, namely in terms of journals and scientific conferences.

The underlying rationale behind the preparation of this document is to support the department’s ambition of pursuing excellence in scientific and technological research, and to constitute an instrument for guaranteeing international recognition as well as a guiding framework for public accountability of the performed research activities.

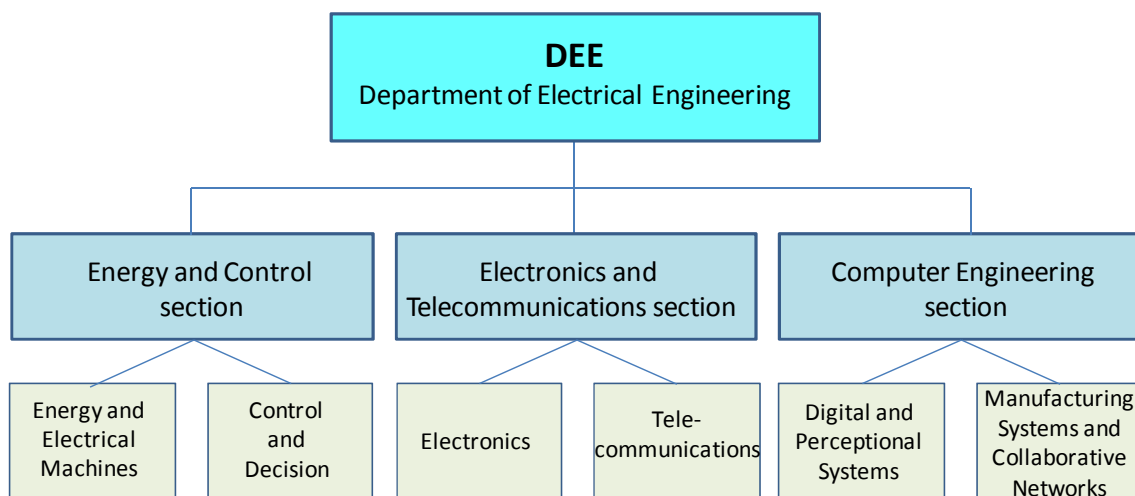
Although representing an effort to help framing our research activities, it is certainly necessary to understand the dynamic nature of research and also the evolving perspectives regarding the accepted research assessment indicators. Therefore this reference document can only be seen as a dynamic report that needs to be periodically tuned and updated.

## 1. INTRODUCTION

### 1.1 Organizational structure of the department

The Department of Electrical Engineering of FCT-UNL is currently organized around three main scientific sections: (1) Energy and Control section, (2) Electronics and Telecommunications section, and (3) Computer Engineering section.

On the other hand, each section includes two areas, as illustrated in the following diagram.



Most research is carried out in the context of the Center of Technology and Systems hosted by the Uninova Institute. But some activities are also carried out in collaboration with other entities or in the facilities of the department itself.

## 1.2 Selecting reference journals

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Given the wide spectrum of topics covered by the area of Electrical and Computer Engineering, there are no “universal” rankings of journals that can be taken as a reference. Furthermore, in this broad area, world-wide research activities are organized around different communities that correspond to different “schools of thought”, with different traditions and publication practices. For instance, while communities in some areas typically publish short papers (a few pages), papers in other areas need to be of a substantial size (20 or more pages). As a result, the average number of publications per researcher and per year is naturally quite distinct for the different communities.

On the other hand, “classical” areas (e.g. electronics, electrical machines, control, and telecommunications) have large research communities, which naturally lead to large impact factors of the corresponding journals. For newer areas (e.g. collaborative networks, computational intelligence, robotic systems), due to the smaller sizes of the corresponding communities, the typical impact factors are much lower.

In the proposed lists of reference journals we took primarily into account the impact factors as measured by ISI Web of Science. Additionally we also considered the classification of SCIMAGO (where the 1<sup>st</sup> quartile – Q1 – corresponds to the highest quality).

In order to cope with the mentioned differences among research areas, a classification of journal (A+, A, B, C) needs to be made according to what is considered typical for each area. Some journals cover more than one area, although with different emphasis. Therefore, it is possible to have one journal classified as A+ in one area (when it is a fundamental reference for that area) and as B in another area (to which it is not so relevant).

In the case of some areas for which additional ranking elements could be found, they were also considered, e.g. Socolnet ranking, for the Collaborative Networks area.

## 1.3 Selecting reference conferences

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Nowadays there are a large variety of conferences, symposia and workshops, nevertheless they can be broadly grouped into four main classes:

- 1) *Scientific events*, with high quality requirements and serious refereeing procedure based on the full paper.
- 2) *“Networking” events*, whose purpose is mainly to help finding partnerships and opportunities for new projects, and rarely have formal proceedings. A typical example is the conferences organized by the European Commission.
- 3) *“Business-oriented dissemination” events*, mostly oriented towards dissemination to industry, typically focused on the discussion of practical cases, and with low evaluation criteria if any (frequently by abstract only).
- 4) *“Mercenary” events*, whose main purpose is to generate revenues to their organizers, have almost no evaluation, and cover a large spectrum of topics.

Given the purpose of this document, we are focused on the first category of events. As typical requirements, we target scientific events that comply with the following characteristics:

- Strict reviewing procedure by international program committee and based on the full paper.
- Preferably having the technical sponsorship of recognized international societies (e.g. IEEE, ACM, IFIP, IFAC, CIRP, Socolnet).
- Proceedings published by recognized publishers, preferably with a world-wide distribution and indexed in the Web of Science.

Similarly to journals, one conference might cover different areas with different emphasis and thus appear in different areas with different classifications.

## 2. ENERGY AND CONTROL SECTION

### 2.1 Area: Energy and Electrical Machines

#### 2.1.1 Research scope

This area encompasses research activities on the following main topics:

- 1) Modern Energy Processing (Power Electronics): Efficient energy conversion, Efficient management of stored energy, Energy harvesting, Energy transfer (especially contactless).
- 2) Power Systems and Grids: High Voltage, Smart grids and power quality, Superconductivity in energy systems, Applied electromagnetics and enabling technologies.
- 3) Alternative Energies and Electrical Drives: Intelligent Control and power quality, Fault diagnosis and fault tolerant operation, Electrical machines design, modeling and control, Alternative energies and intelligent buildings.

#### 2.1.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago
<b>Modern Energy Processing</b>						
1	A+	IEEE Transactions on Industrial Electronics	0278-0046	5,4680	4,6650	Q1
2	A+	Applied Physics Letters	0003-6951	3,7260	4,0960	Q1
3	A+	Journal of Power Sources	0378-7753	3,4770	3,8560	Q1
4	A+	IEEE Transactions on Power Electronics	0885-8993	3,4830	3,8130	Q1
5	A+	IEEE Transactions on Industry Applications	0093-9994	2,0580	2,8120	Q1
6	A+	Journal of Applied Physics	0021-8979	2,2010	2,4790	Q1
7	A+	IEEE Transactions on Circuits and Systems I	1549-8328	2,0430	2,4110	Q1
8	A+	IEEE Transactions on Vehicular Technology	0018-9545	1,308	2,239	Q1
9	A+	IEEE Transactions on Aerospace and Electronic Systems	0018-9251	1,0240	1,7570	Q2
10	A+	IEEE Transactions on Intelligent Transportation Systems	1524-9050	1,0240	1,7570	Q1
11	A+	Review of Scientific Instruments	0034-6748	1,7380	1,6770	Q1
12	A	Energy Conversion and Management	0196-8904	1,8130	2,2900	Q1
13	A	Engineering Applications of Artificial Intelligence	0952-1976	1,3970	1,8510	Q2
14	A	IEEE Transactions on Education	0018-9359	1,4000	1,4170	Q2
15	A	Annals of Physics	0003-3804	1,1610	1,2500	-
16	A	IEEE Transactions on Magnetics	0018-9464	1,1290	1,1470	Q1
17	B	IEEE Transactions on Instrumentation and Measurement	0018-9456	0,9780	1,1380	Q2
<b>Power Systems and Grids</b>						
1	A+	IEEE Transactions on Industrial Electronics	0278-0046	5,4680	4,6650	Q1
2	A+	Applied Physics Letters	0003-6951	3,7260	4,0960	Q1
3	A+	Journal of Power Sources	0378-7753	3,4770	3,8560	Q1
4	A+	Phys. Rev. B (Cond. Matter and Materials)	1098-0121	3,3220	3,2840	Q1
5	A+	IEEE Transactions on Energy Conversion	0885-8969	2,6170	3,0830	Q1
6	A+	IEEE Transactions on Power Systems	0885-8950	1,8750	2,7460	Q2

7	A+	Expert Systems with Applications	0957-4174	2,596	2,638	Q2
8	A	IEEE Transactions on Power Delivery	0885-8977	1,2890	1,6390	Q2
9	A	IEEE Transactions on Electromagnetic Compatibility	0018-9375	1,0830	1,5040	Q1
10	A	IEEE Transactions on Dielectrics and Electrical Insulation	1070-9878	1,0370	1,4730	Q2
11	A	IOP Superconductor Science and Technology	0953-2048	1,8470	1,4650	-
12	A	IEEE Transactions on Education	0018-9359	1,4000	1,4170	Q2
13	A	IEEE Transactions on Magnetics	0018-9464	1,1290	1,1470	Q1
14	A	International Journal of Energy Research	0363-907X	1,0160	1,0720	Q1
15	A	Measurement	0263-2241	0,6620	0,8910	Q1
16	B	IEEE Transactions on Instrumentation and Measurement	0018-9456	0,9780	1,1380	Q2
17	B	Cryogenics	0011-2275	0,9150	1,0180	Q2
18	B	IEEE Transactions on Applied Superconductivity	1051-8223	0,9190	0,7870	Q1
19	B	International Journal of Electrical Power & Energy Systems	0142-0615	0,7140	0,7810	Q2
20	B	IET Electric Power Applications	1751-8660	0,6600	0,6700	Q2
21	B	Physica C	0921-4534	0,7400	0,6610	Q2
22	B	Journal of Superconductivity and Novel Magnetism	1557-1947	0,571		Q2
23	B	IEEE Transactions on Electrical and Electronic Engineering	1931-4973	0,3020	0,3020	Q2
24	B	European Transactions on Electrical Power	1430-144X	0,3600	0,2940	Q3
25	C	IEEE Transactions on Electrical and Electronic Engineering	1931-4973	0,3020	0,3020	Q2
26	C	European Transactions on Electrical Power	1430-144X	0,3600	0,2940	Q3
27	C	Modeling, Measurement and Control A	1259-5985			Q4
<b>Alternative Energies and Electrical Drives</b>						
1	A+	IEEE Transactions on Evolutionary Computation	1089-778X	3,7360	6,6120	Q1
2	A+	IEEE Transactions on Fuzzy Systems	1063-6706	3,6240	4,8040	Q1
3	A+	IEEE Transactions on Industrial Electronics	0278-0046	5,4680	4,6650	Q1
4	A+	Renewable & Sustainable Energy Reviews	1364-0321	4,0750	4,1230	Q1
5	A+	IEEE Transactions on Energy Conversion	0885-8969	2,6170	3,0830	Q1
6	A+	IEEE Transactions on Industry Applications	0093-9994	2,0580	2,8120	Q1
7	A+	Expert Systems with Applications	0957-4174	2,596	2,638	Q2
8	A+	Energy Conversion and Management	0196-8904	1,8130	2,2900	Q1
9	A	Pattern Recognition Letters	0167-8655	1,5590	1,9010	Q1
10	A	Engineering Applications of Artificial Intelligence	0952-1976	1,3970	1,8510	Q2
11	A	IEEE Transactions on Systems, Man, and Cybernetics, Part C	1094-6977	1,3750	1,8230	Q2
12	A	IEEE Transactions on Education	0018-9359	1,4000	1,4170	Q2
13	B	Mathematics and Computers in Simulation	0378-4754	0,9300	0,9650	Q2
14	B	International Journal of Neural Systems	0129-0657	0,9010		Q1
15	B	IET Electric Power Applications	1751-8660	0,6600	0,6700	Q2
16	B	Mathematics and Computers in Simulation	0378-4754	0,9300	0,9650	Q2
17	C	Modeling, Measurement and Control A	1259-5985			Q4

**2.1.3 Reference conferences**

	<b>Class</b>	<b>Conference title</b>	<b>Sponsors</b>	<b>Indexing</b>
1	A+	IEEE ECCE (was PESC+IAS) - IEEE Energy Conversion Congress and Expo	IEEE, IAS, PELS	IEEE, ISI-WoS
2	A+	EPE-PEMC (was PEMC) – Conference on Power Electronics and Motion Control	EPE	IEEE, ISI-WoS
3	A+	INTELEC - International Telecommunications Energy Conference	INTELEC, IEEE	IEEE, ISI-WoS
4	A+	IECON - Annual Conference of the IEEE Industrial Electronics Society	IEEE, IES	IEEE, ISI-WoS
5	A	EPE - International European Power Electronics Conference and Exhibition	EPE	IEEE, ISI-WoS
6	A	POWERENG - International Conference on Power Engineering, Energy and Electrical Drives	IEEE	IEEE, ISI-WoS
7	A	ISIE – International Symposium on Industrial Electronics	IEEE, IES	IEEE, ISI-WoS
8	A	PEDS - International Conference on Power Electronics and Drive Systems	IEEE, IAS, PELS, IES	IEEE, ISI-WoS
9	A	CPE – International Conference-Workshop on Compatibility and Power Electronics	IEEE, IES	IEEE, ISI-WoS
10	A	ASC – Applied Superconductivity Conference		IEEE, ISI-WoS
11	B	EUCAS - European Conference on Applied Superconductivity	ESAS	Scopus, Inspec
12	B	ETFA – IEEE International Conference on Emerging Technologies and Factory Automation	IEEE, IES	IEEE, ISI-WoS
13	B	Conference on Telecommunications	IEEE	IEEE, ISI-WoS
14	C	EDUCON - IEEE Engineering Education	IEEE	IEEE
15	C	ISCM - International Conference on Superconductivity and Magnetism	-	-
16	C	OPTIM - International Conference on Power Electronics and Electrical Engineering	IEEE, IET	-

## 2.2 Area: Control and Decision

### 3.2.1 Research scope

This scientific area covers a diversified set of topics around systems theory, control, optimization, decision and signal processing, as well as the associated methodologies and interactions among these topics. Research activities address fundamental principles, simulation, and experimental applications. Main subareas:

- 1) Intelligent Control Systems: project of control systems, optimization and optimal control, control and computational intelligence, reconfigurable systems.
- 2) Distributed Decision Systems: Distributed control systems, supervision systems, learning systems, computational applications in control and decision.
- 3) Signal processing: fundamentals of signal processing, medical and biological applications, social and economic applications.

### 3.2.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago
<b>Intelligent Control Systems</b>						
1	A+	IEEE Transactions on Automatic Control	0018-9286	3.293	4.828	Q1
2	A+	IEEE Transactions on Fuzzy Systems	1063-6706	3.624	4.804	Q1
3	A+	IEEE Transactions on Neural Networks	1045-9227	3.726	4.144	Q1
4	A+	Automatica	0005-1098	3.178	4.013	Q1
5	A+	IEEE Transactions on Robotics	1552-3098	2.656	3.751	Q1
6	A+	IEEE Intelligent Systems	1541-1672	2.278	3.057	Q2
7	A+	IEEE Computational Intelligence Magazine	1556-603X	2.535	2.767	Q1
8	A+	IEEE Control Systems Magazine	1066-033X	2.827	2.731	Q1
9	A+	IEEE Robotics & Automation Magazine	1070-9932	3.000	2.584	Q1
10	A+	IEEE Transactions on Control Systems Technology	1063-6536	2.130	2.566	Q1
11	A+	Control Engineering Practice	0967-0661	1.871	2.091	Q1
12	A	IEEE Transactions on Industry Applications	0093-9994	2.058	2.812	Q1
13	A	Journal of Process Control	0959-1524	1.606	2.197	Q2
14	A	IEEE Transactions on Automation Science and Engineering	1545-5955	1.929	2.100	Q2
15	A	International Journal of Robust and Nonlinear Control	1049-8923	1.560	1.816	Q1
16	A	International Journal of Adaptive Control and Signal Processing	0890-6327	1.403	1.531	Q2
17	A	IET Control & Automation	-	1,867	3.200	Q4
18	B	International Journal of Control	0020-7179	1.130	1.635	Q2
19	B	IET Control Theory and Applications	1751-8644	1.070	1.070	Q
<b>Distributed Decision Systems</b>						
1	A+	IEEE Transactions on Automatic Control	0018-9286	3.293	4.828	Q1
2	A+	IEEE Transactions on Fuzzy Systems	1063-6706	3.624	4.804	Q1
3	A+	IEEE Transactions on Neural Networks	1045-9227	3.726	4.144	Q1
4	A+	Automatica	0005-1098	3.178	4.013	Q1
5	A+	IEEE Transactions on Robotics	1552-3098	2.656	3.751	Q1
6	A+	IEEE Transactions on Intelligent Transportation Systems	1524-9050	2.844	3.302	Q1

7	A+	IEEE Intelligent Systems	1541-1672	2.278	3.057	Q2
8	A+	IEEE Computational Intelligence Magazine	1556-603X	2.535	2.767	Q1
9	A+	IEEE Control Systems Magazine	1066-033X	2.827	2.731	Q1
10	A+	IEEE Robotics & Automation Magazine	1070-9932	3.000	2.584	Q1
11	A+	IEEE Transactions on Control Systems Technology	1063-6536	2.130	2.566	Q1
12	A+	Computers in Industry	0166-3615	2.014	2.338	Q1
13	A+	Decision Support Systems	0167-9236	1.873	2.276	Q1
14	A+	Control Engineering Practice	0967-0661	1.871	2.091	Q1
15	A	IEEE Transactions on Knowledge and Data Engineering	1041-4347	2.236	3.585	Q2
16	A	IET Control & Automation	-	1.867	3.200	Q4
17	A	IEEE Transactions on Industry Applications	0093-9994	2.058	2.812	Q1
18	A	IEEE Transactions on Industrial Informatics	1551-3203	2.356	2.565	Q1
19	A	Journal of Process Control	0959-1524	1.606	2.197	Q2
20	A	IEEE Transactions on Automation Science and Engineering	1545-5955	1.929	2.100	Q2
21	B	International Journal of Control	0020-7179	1.130	1.635	Q2
22	B	International Journal of Adaptive Control and Signal Processing	0890-6327	1.403	1.531	Q2
23	B	Engineering Applications of Artificial Intelligence	0952-1976	1.397	1.851	Q2
24	B	International Journal of Robust and Nonlinear Control	1049-8923	1.560	1.816	Q1
<b>Signal Processing</b>						
1	A+	NeuroImage	1053-8119	5.694	6.884	Q1
2	A+	IEEE Signal Processing Magazine	1053-5888	3.758	6.157	Q1
3	A+	IEEE Transactions on Medical Imaging	0278-0062	4.004	5.544	Q1
4	A+	Medical Image Analysis	1361-8415	3.602	4.498	Q1
5	A+	Automatica	0005-1098	3.178	4.013	Q1
6	A+	IEEE Transactions on Signal Processing	1053-587X	2.335	3.485	Q1
7	A+	IEEE Transactions on Circuits and Systems	1549-8328	2.043	2.411	Q1
8	A+	Mechanical Systems and Signal Processing	0888-3270	1.984	1.981	Q1
9	A	Journal of Neuroscience Methods	0165-0270	2.092	2.372	Q2
10	A	Physics Letters A	0375-9601	2.174	1.961	Q2
11	A	Digital Signal Processing	1051-2004	1.486	1.575	Q2
12	A	International Journal of Adaptive Control and Signal Processing	0890-6327	1.403	1.531	Q2
13	A	Computer Methods and Programs in Biomedicine	0169-2607	1.220	1.284	Q1
14	A	IET Control Theory and Applications	1751-8644	1.070	1.070	Q1
15	A	Signal Processing	1051-2004	1.486	1.575	Q2
16	A	Computerized Medical Imaging and Graphics	0895-6111	1.192	1.363	Q1
17	B	Applied Mathematical Modelling	0307904X	0.931	1.094	Q2
18	B	Computers and Mathematics with Applications	0898-1221	0.997	1.094	Q2
19	B	Journal of Vibration and Control	1077-5463	0.656	0.863	Q2
20	B	IET Signal Processing	1751-9675	0.762	0.762	Q3
21	B	European Transactions on Telecommunications	1124318X	0.472	0.549	Q2

**3.2.3 Reference conferences**

	<b>Class</b>	<b>Conference title</b>	<b>Sponsors</b>	<b>Indexing</b>
<b>Intelligent Control Systems</b>				
1	A+	IFAC World Congress	IFAC	ISI-WoS
2	A+	IEEE Conference on Decision and Control	IEEE	ISI-WoS, IEEE
3	A+	European Control Conference ECC	EUCA	ISI-WoS
4	A+	American Control Conference ACC	AACC, IFAC	ISI-WoS
5	A	IFAC Safeprocess Symposium	IFAC	
6	A	IEEE International Conference on Control and Fault-Tolerant Systems (SysTol)	IEEE	
7	A	IFAC International Conference on Intelligent Control Systems and Signal Processing	IFAC	
8	A	IEEE International Conference on Control and Automation (ICCA)	IEEE	
9	A	IEEE Mediterranean Conference on Control & Automation	IEEE	ISI-WoS (some years)
10	A	FUZZ-IEEE International Conference on Fuzzy Systems	IEEE	ISI-WoS, IEEE
11	A	IEEE International Conference on Intelligent Systems	IEEE	ISI-WoS, IEEE
12	B	IEEE International Conference on Control Applications	IEEE	ISI-WoS, IEEE
<b>Distributed Decision Systems</b>				
1	A	IFAC World Congress	IFAC	ISI-WoS
2	A	IFAC Safeprocess Symposium	IFAC	
3	A	IEEE Conference on Decision and Control	IEEE	ISI-WoS, IEEE
4	A	European Control Conference ECC	EUCA	ISI-WoS
5	A	American Control Conference ACC	AACC, IFAC	ISI-WoS
6	A	IEEE International Conference on Emerging Technologies and Factory Automation	IEEE	ISI-WoS, IEEE
7	B	IFAC International Conference on Intelligent Control Systems and Signal Processing	IFAC	
8	B	ICCA - IEEE International Conference on Control and Automation	IEEE	ISI-WoS, IEEE
9	B	IEEE Mediterranean Conference on Control & Automation	IEEE	ISI-WoS (some years)
10	B	IEEE International Conference on Control Applications	IEEE	ISI-WoS, IEEE
11	B	IEEE International Conference on Intelligent Systems	IEEE	ISI-WoS, IEEE
12	B	IEEE International Conference on Industrial Informatics	IEEE	ISI-WoS, IEEE
<b>Signal Processing</b>				
1	A+	IFAC World Congress	IFAC	ISI-WoS
2	A+	European Control Conference ECC	EUCA	ISI-WoS
3	A+	American Control Conference ACC	AACC	ISI-WoS
4	A+	ICASSP - International Conference on Acoustics, Speech, and Signal Processing	IEEE	
5	A+	EUSIPCO - European Signal Processing Conference	EURASIP	
6	A	IEEE Conference on Decision and Control	IEEE	ISI-WoS (some years)
7	A	IFAC International Conference on Intelligent Control Systems and Signal Processing	IFAC	
8	A	ISCAS - IEEE International Symposium on Circuits and Systems	IEEE	
9	A	FDA - IFAC Workshop on Fractional Differentiation and Its Applications	IFAC	
10	A	ENOC - EUROMECH Nonlinear Dynamics Conference	EUROMECH	
11	B	Symposium on Fractional Signals and Systems		

### 3. ELECTRONICS AND TELECOMMUNICATIONS SECTION

#### 3.1 Area: Electronics

##### 3.1.1 Research scope

Main research areas:

- 1) Analog systems electronics: Base band circuits, filters and data converters.
- 2) Radio frequency circuits and systems: Radio frequency circuits (excluding microwaves), namely oscillators, LNAs, VCOs, PLLs, Mixers, power amplifiers and UWB systems.
- 3) Computer Aided Design of electronic circuits in nanometer technologies: Electronic Design Automation of analog circuits and systems.
- 4) Biomedical electronic circuits and systems: electronic circuits and systems used in biomedical applications.
- 5) Photonics, Sensors and Nanotechnology: optoelectronic devices, optical transducers and sensors, nanoelectronics.

##### 3.1.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago
<b>Analog systems electronics</b>						
1	A+	IEEE Transactions on Industrial Electronics	02780046	5.468	4.665	Q1
2	A+	Journal of Solid-State Circuits	00189200	3.466	4.037	Q1
3	A+	IEEE Transactions on Biomedical Circuits and Systems	00189294	2.496	3.301	Q1
4	A+	IEEE Transactions on Circuits and Systems I	15498328	2.043	2.411	Q1
5	A	International Journal on Circuit Theory and Applications	00989886	2.389	1.765	-
6	A	IEEE Transactions on Circuits and Systems II	15497747	1.436	1.752	-
7	A	IEEE Transactions on Nuclear Science	00189499	1.518	1.6	Q1
8	B	Electronics Letters	00135194	1.14	1.152	Q1
9	B	International Journal on Analog Integrated Circuits and Signal Processing	09251030	0.591	0.516	-
<b>Radio frequency circuits and system</b>						
1	A+	Journal of Solid-State Circuits	00189200	3.466	4.037	Q1
2	A+	IEEE Transactions on Circuits and Systems I	15498328	2.043	2.411	Q1
3	A	IEEE Transactions on Circuits and Systems II	15497747	1.436	1.752	-
4	A	International Journal on Circuit Theory and Applications	00989886	2.389	1.765	-
5	B	Electronics Letters	00135194	1.14	1.152	Q1
6	B	Journal on Analog Integrated Circuits and Signal Processing	09251030	0.591	0.516	-
<b>Computer Aided Design of electronic circuits in nanometer technologies</b>						
1	A+	IEEE Transactions on Circuits and Systems I	15498328	2.043	2.411	Q1
2	A	IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems	02780070	1.466	1.867	Q1
<b>Biomedical electronic circuits and systems</b>						
1	A+	IEEE Transactions on Industrial Electronics	02780046	5.468	4.665	Q1
2	A+	IEEE Transactions on Biomedical Circuits and Systems	00189294	2.496	3.301	Q1
3	A+	IEEE Transactions on Circuits and Systems I	15498328	2.043	2.411	Q1

4	A	IEEE Transactions on Circuits and Systems II	15497747	1.436	1.752	-
5	B	Electronics Letters	00135194	1.14	1.152	Q1
<b>Photonics, Sensors and Nanotechnology</b>						
1	A+	Applied Physics Letters	0003-6951	179925	3,726	Q1
2	A+	IEEE Transactions on Electron Devices	0018-9383	14073	2,730	Q1
3	A+	Physical Review E - Statistical, Nonlinear, and Soft Matter Physics	1539-3755	63423	2,508	Q1
4	A+	Journal of Applied Physics	0021-8979	113773	2,201	Q1
5	A+	Journal of Nanoscience and Nanotechnology	15334880		1,987	Q1
6	A+	Thin Solid Films	0040-6090	31109	1,884	Q1/Q2
7	A+	Materials Science and Engineering: C - Materials for Biological Applications	0928-4931	3340	1,812	-
8	A	Review of Scientific Instruments	0034-6748	19770	1,738	Q1
9	A	Sensors and Actuators, A: Physical	0924-4247	9282	1,724	Q1
10	A	Optical Materials	0925-3467	4438	1,714	Q2
11	A	IEEE Sensors Journal	1530-437X	1968	1,610	Q1
12	A	Journal of Solid State Electrochemistry	1432-8488	1617	1,597	Q1
13	A	Materials Science and Engineering B	0921-5107	7079	1,577	Q2
14	A	Applied Surface Science	0169-4332	18134	1,576	Q2
15	A	Journal of Non-Crystalline Solids	0022-3093	19444	1,449	Q2
16	A	Philosophical Magazine	1478-6435	7235	1,384	Q2
17	A	Physica E: Low-Dimensional Systems and Nanostructures	1386-9477		1,230	Q2
18	A	Superlattices and Microstructures	0749-6036	1518	1,211	Q2
19	A	Physica Status Solidi (A) Applications and Materials	1862-6300		1,205	Q2
20	A	Physica Status Solidi (B) Basic Research	0370-1972		1,166	Q2
21	A	Vacuum	0042-207X	3673	1,114	Q3
22	B	Mathematics and Computers in Simulation	0378-4754	1378	0,930	Q2
23	B	Optical Engineering	0091-3286	6048	0,722	Q3
24	B	Technical Physics Letters	1063-7850	1629	0,581	Q4
25	B	Journal of Superconductivity and Novel Magnetism	1557-1939	635	0,571	Q2/Q3
26	C	Condensed Matter Physics	1607-324X	227	0,488	Q3
27	C	Revista Mexicana de Fisica	0035-001X	327	0,262	Q4

### 3.1.3 Reference conferences

	Class	Conference title	Sponsors	Indexing
<b>Analog systems electronics</b>				
1	A+	ISSCC - International Solid-State Circuits Conference	IEEE	ISI-WoS (some years), IEEE
2	A	CICC - IEEE Custom Integrated Circuits Conference	IEEE	ISI-WoS (some years), IEEE
3	A+	VLSI – IEEE International Conference on VLSI Design	IEEE	ISI-WoS, IEEE
4	A	ESSCIRC - European Solid-State Circuits Conference	IEEE	ISI-WoS, IEEE
5	A	ISCAS – International Symposium on Circuits and Systems	IEEE	ISI-WoS (some years), IEEE

6	B+	ADDA- IEE International Conference on Advanced A/D and D/A Conversion Techniques and their Applications	IEE	-
7	B	ICEC S – IEEE International Conference on Electronics, Circuits, and Systems	IEEE	IEEE
8	B	MWSCAS – IEEE International Midwest Symposium on Circuits and Systems	IEEE	IEEE
<b>Radio frequency circuits and system</b>				
1	A+	ISSCC- International Solid-State Circuits Conference	IEEE	ISI-WoS (some years), IEEE
2	A+	VLSI – IEEE International Conference on VLSI Design	IEEE	ISI-WoS, IEEE
3	A+	RFIC – IEEE Symposium on Radio Frequency Integrated Circuits	IEEE	ISI-WoS, IEEE
4	A	CICC - IEEE Custom Integrated Circuits Conference	IEEE	ISI-WoS (some years), IEEE
5	A	ESSCIRC - European Solid-State Circuits Conference	IEEE	ISI-WoS, IEEE
6	A	ISCAS – International Symposium on Circuits and Systems	IEEE	ISI-WoS (some years), IEEE
7	B	ICEC S – IEEE International Conference on Electronics, Circuits, and Systems	IEEE	IEEE
8	B	MWSCAS – IEEE International Midwest Symposium on Circuits and Systems	IEEE	IEEE
<b>Computer Aided Design of electronic circuits in nanometer technologies</b>				
1	A+	DAC - ACM/EDAC/IEEE Design Automation Conference	ACM/EDAC/IEEE	ISI-WoS, IEEE
2	A+	ICCAD – IEEE/ACM International Conference on Computer-Aided Design	IEEE, ACM	
3	A	DATE - Design, Automation, and Test in Europe	IEEE	ISI- WoS, IEEE
4	A	ISCAS – International Symposium on Circuits and Systems	IEEE	ISI-WoS (some years), IEEE
5	B+	ADDA - IEE International Conference on Advanced A/D and D/A Conversion Techniques and their Applications	IEE	-
6	B	ICEC S – IEEE International Conference on Electronics, Circuits, and Systems	IEEE	IEEE
7	B	MWSCAS – IEEE International Midwest Symposium on Circuits and Systems	IEEE	IEEE
<b>Biomedical electronic circuits and systems</b>				
1	A+	ISSCC- International Solid-State Circuits Conference	IEEE	ISI-WoS (some years), IEEE
2	A+	VLSI – IEEE International Conference on VLSI Design	IEEE	ISI-WoS, IEEE
3	A+	RFIC – IEEE Symposium on Radio Frequency Integrated Circuits	IEEE	ISI-WoS, IEEE
4	A	CICC - IEEE Custom Integrated Circuits Conference	IEEE	ISI-WoS (some years), IEEE
5	A	ESSCIRC - European Solid-State Circuits Conference	IEEE	ISI-WoS, IEEE
6	A	ISCAS – International Symposium on Circuits and Systems	IEEE	ISI-WoS (some years), IEEE
7	B+	BIOCAS – IEEE Biomedical Circuits and Systems Conference	IEEE	-
<b>Photonics, Sensors and Nanotechnology</b>				
1	A+	MRS – Materials Research Society Spring Meeting	Materials Research Society	ISI-WoS
2	A+	SensorComm - International Conference on Sensor Technologies and Applications	IARIA	-
3	A+	Eurosensors - European Conference on solid state transducers		ISI-WoS (some years)
4	A+	MPA - Materials, Processes and Applications		-
5	A+	NanoSmat – International Conference on Surfaces, Coatings and Nanostructured Materials		ISI-WoS (some years),
6	A+	ICANS - International Conference on Amorphous and Nanocrystalline semiconductors		ISI-WoS (some years),
7	A+	SSD - International Conference on Smart Systems and Devices		-
8	A	Asi-net - Euroregional workshop on thin film devices		-

9	B	Ibersensor - Ibero-American Congress on Sensors		-
10	B	Materials - Portuguese Material Society Meeting		-

\* Proceedings of this conference were indexed in ISI-WoS in some years.

## 3.2 Area: Telecommunications

### 3.2.1 Research scope

Main research areas:

- 1) Integrated Telecommunication Networks: Communication Protocols – design and analysis of protocols for wireless network access at MAC (Medium Access Control) layer. Ad-hoc and sensor networks' protocols. Cross-layer optimization. Routing at inter-domain level in the Internet.
- 2) Communications: Modulation and Signal Design. Coding Theory and Applications. Wireless Personal Communications. Synchronization. Channel Equalization. Detection and Estimation.

### 3.2.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago
<b>Integrated Telecommunication Networks</b>						
1	A+	Proceedings of the IEEE	0018-9219	4,613	6,824	Q1
2	A+	IEEE Wireless Communications	1536-1284	3,180	5,935	Q1
3	A+	IEEE Journal on Selected Areas in Communications	0733-8716	4,249	5,615	Q1
4	A+	IEEE Transactions on Information Theory	0018-9448	3,793	5,434	Q1
5	A+	IEEE Transactions on Mobile Computing	1536-1233	3,352	5,021	Q1
6	A+	IEEE/ACM Transactions on Networking	1063-6692	2,576	4,818	Q1
7	A+	IEEE Network	0890-8044	3,068	4,422	Q1
8	A+	IEEE Pervasive Computing	1536-1268	2,615	4,159	Q1
9	A+	IEEE Communications Magazine	0163-6804	2,799	3,927	Q1
10	A+	IEEE Transactions on Communications	0090-6778	2,070	3,694	Q1
11	A+	IEEE Transactions on Wireless Communications	1536-1276	2,181	3,324	Q1
12	A+	IEEE Transactions on Multimedia	1520-9210	2,288	2,932	Q1
13	A+	IEEE Transactions on Vehicular Technology	0018-9545	1,308	2,239	Q1
14	A	Wireless Communications and Mobile Computing	1530-8669	0,909	2,329	Q2
15	A	Wireless Networks	1022-0038	1,194	2,040	Q2
16	A	IEEE Communications Letters	1089-7798	1,232	1,876	Q1
17	A	Mobile Networks and Applications	1383-469X	1,619	1,871	Q1
18	A	Computer Networks	1389-1286	1,304	1,804	Q2
19	A	Telecommunications Policy	0308-5961	1,244	1,534	Q1
20	A	IEEE Signal Processing Letters	1070-9908	1,203	1,528	Q1
21	A	Internet Research	1066-2243	0,800	1,157	Q2
22	A	Eurasip Journal on Advances in Signal Processing	1687-6172	1,055	1,151	Q2
23	A	Computer Communications	0140-3664	0,884	1,005	Q2
24	A	Ad Hoc Networks	1570-8705			Q1
25	B	Eurasip Journal on Wireless Communications and Networking	1687-1499	0,976		Q2
26	B	International Journal of Distributed Sensor Networks	1550-1329	0,722	0,930	Q2/Q3
27	B	Personal and Ubiquitous Computing	1617-4909	0,865	0,865	Q2
28	B	IEE Proceedings in Communications	1350-2425	0,788	0,853	-

29	B	International Journal of Satellite Communications and Networking	1542-0973	0,607	0,810	Q3
30	B	Telecommunication Systems	1018-4864	0,396	0,780	Q3
31	B	Journal of Network and Systems Management	1064-7570	0,685		Q3
32	B	European Transactions on Telecommunications	1124-318X	0,472	0,549	Q2
33	B	Bell Labs Technical Journal	1089-7089	0,492	0,547	Q3
34	B	International Journal of Communication Systems	1074-5351	0,394	0,539	Q3
35	C	Canadian Journal of Electrical and Computer Engineering	0840-8688	0,389	0,424	Q2
36	C	Wireless Personal Communications	0929-6212	0,331	0,418	Q3
37	C	IET Communications	1751-8628	0,345	0,345	Q2
38	C	Space Communications	0924-8625	0,077	0,167	Q3
<b>Communications</b>						
1	A+	Proceedings of the IEEE	0018-9219	4,613	6,824	Q1
2	A+	IEEE Signal Processing Magazine	1053-5888	3,758	6,157	Q1
3	A+	IEEE Wireless Communications	1536-1284	3,180	5,935	Q1
4	A+	IEEE Journal on Selected Areas in Communications	0733-8716	4,249	5,615	Q1
5	A+	IEEE Transactions on Information Theory	0018-9448	3,793	5,434	Q1
6	A+	IEEE Transactions on Mobile Computing	1536-1233	3,352	5,021	Q1
7	A+	IEEE Communications Magazine	0163-6804	2,799	3,927	Q1
8	A+	IEEE Transactions on Communications	0090-6778	2,070	3,694	Q1
9	A+	IEEE Transactions on Signal Processing	1053-587X	2,335	3,485	Q1
10	A+	IEEE Transactions on Wireless Communications	1536-1276	2,181	3,324	Q1
11	A+	IEEE Transactions on Vehicular Technology	0018-9545	1,308	2,239	Q1
12	A	Wireless Communications and Mobile Computing	1530-8669	0,909	2,329	Q2
13	A	Wireless Networks	1022-0038	1,194	2,040	Q2
14	A	IEEE Communications Letters	1089-7798	1,232	1,876	Q1
15	A	IEEE Transactions on Aerospace and Electronic Systems	0018-9251	1,024	1,757	Q1/Q2
16	A	Digital Signal Processing	1051-2004	1,486	1,575	Q2
17	A	IEEE Signal Processing Letters	1070-9908	1,203	1,528	Q1
18	A	Signal Processing	0165-1684	1,256	1,319	Q2
19	A	Electronics Letters	0013-5194	1,140	1,152	Q1
20	A	Eurasip Journal on Advances in Signal Processing	1687-6172	1,055	1,151	Q2
21	B	Eurasip Journal on Wireless Communications and Networking	1687-1499	0,976		Q2
22	B	IEE Proceedings in Communications	1350-2425	0,788	0,853	-
23	B	International Journal of Satellite Communications and Networking	1542-0973	0,607	0,810	Q3
24	B	Telecommunication Systems	1018-4864	0,396	0,780	Q3
25	B	IET Signal Processing	1751-9675	0,762	0,762	Q2/Q3
26	B	European Transactions on Telecommunications	1124-318X	0,472	0,549	Q2
27	B	Bell Labs Technical Journal	1089-7089	0,492	0,547	Q3
28	B	International Journal of Communication Systems	1074-5351	0,394	0,539	Q3
29	C	Canadian Journal of Electrical and Computer Engineering	0840-8688	0,389	0,424	Q2

30	C	Wireless Personal Communications	0929-6212	0,331	0,418	Q3
31	C	IET Communications	1751-8628	0,345	0,345	Q2
32	C	Space Communications	0924-8625	0,077	0,167	Q3

### 3.2.3 Reference conferences

	Class	Conference title	Sponsors	Indexing
<b>Integrated Telecommunication Networks</b>				
1	A+	IEEE Infocom -IEEE Computer and Communications Societies	Communications/Computer Soc.	ISI-WoS, IEEE
2	A+	ACM SIGCOMM -ACM Conf on Applic, Techno, Archit, and Protocols for Comp Comm	SIGCOMM	ISI-WoS (some years)
3	A+	ACM MobiCom -Intl Conf on Mobile Computing and Networking	SIGMOBILE	ISI-WoS
4	A+	ACM MobiHoc - ACM Int Symp on Mobile Ad Hoc Networking and Computing	SIGMOBILE	ISI-WoS
5	A	IEEE ICC -IEEE Int Conf on Communications	Communications Soc.	ISI-WoS, IEEE
6	A	IEEE WCNC -IEEE Conf on Wireless Communications and Networking	Communications Soc.	ISI-WoS, IEEE
7	A	IEEE ICDCS -Int Conf on Distributed Computing Systems	Computer Soc.	ISI-WoS, IEEE
8	A	IEEE ICCCN -Int Conf on Computer Communications and Networks	TCCC -Communications Soc.	ISI-WoS, IEEE
9	A	IEEE LCN -Conf on Local Computer Networks	IEEE Computer	ISI-WoS, IEEE
10	A	IFIP Networking	IFIP	ISI-WoS
11	A	EWSN - European Conf on Wireless Sensor Networks		-
12	A	ACM CoNEXT -Conf on emerging Networking Experiments and Technologies	SIGComm	ISI-WoS
13	A	IEEE Globecom -IEEE Conf and Exhibition. Global Telecommunications	Communications Soc.	ISI-WoS, IEEE
14	A	IEEE PIMRC -IEEE Int Symp on Personal, Indoor and Mobile Radio Communications	Communications Soc.	ISI-WoS, IEEE
15	A	IEEE VTC -IEEE Conference on Vehicular Technology	Vehicular Technology Soc.	ISI-WoS, IEEE
16	B	IEEE MILCOM -Military Communications Conference	Communications Soc.	IEEE (some years)
17	B	IEEE APCC - Asia Pacific Conference on Communications	IEEE Comsoc	IEEE
18	B	IEEE ISWCS -International Symposium on Wireless Communication Systems	Vehicular Technology Soc.	ISI-WoS, IEEE
19	B	IEEE PACRIM -IEEE Pacific Rim Conference on Communications, Computers and Signal Processing	IEEE	IEEE
20	B	IEEE IWSSC -Int Workshop on Satellite and Space Communications	IEEE, ESA	IEEE
21	B	ACM IWCMC- Int Wireless Communications and Mobile Computing Conf	ACM	-
22	B	EW – European Wireless Conference		ISI-WoS
23	B	WMNC - IFIP Wireless and Mobile Networking Conference	IFIP	-
24	B	Sarnoff Symposium	IEEE	ISI-WoS, IEEE
<b>Communications</b>				
1	A+	IEEE Infocom -IEEE Computer and Communications Societies	Communications/Computer Soc.	ISI-WoS, IEEE
2	A	IEEE ICC -IEEE Int Conf on Communications	Communications Soc.	ISI-WoS, IEEE
3	A	IEEE WCNC -IEEE Conf on Wireless Communications and Networking	Communications Soc.	ISI-WoS, IEEE
4	A	IEEE ICCCN -Int Conf on Computer Communications and Networks	TCCC -Communications Soc.	ISI-WoS, IEEE
5	A	IEEE LCN -Conf on Local Computer Networks	IEEE Computer	ISI-WoS, IEEE
6	A	IEEE Globecom -IEEE Conf and Exhibition. Global Telecommunications	Communications Soc.	ISI-WoS, IEEE

7	A	IEEE PIMRC -IEEE Int Symp on Personal, Indoor and Mobile Radio Communications	Communications Soc.	ISI-WoS, IEEE
8	A	IEEE SPAWC-IEEE Int Workshop on Signal Processing Advances for Wireless Communications	Signal Processing Soc.	ISI-WoS, IEEE
9	A	IEEE ICASSP - Int Conf on Acoustics, Speech, and Signal Processing	Signal Processing Soc.	ISI-WoS, IEEE
10	A	IEEE ISIT - IEEE Int Symp on Information Theory	Information Theory Soc.	ISI-WoS, IEEE
11	A	EUSIPCO - European Signal Processing Conference		ISI-WoS
12	A	IEEE VTC -IEEE Conference on Vehicular Technology	Vehicular Technology Soc.	ISI-WoS, IEEE
13	B	IEEE MILCOM -Military Communications Conference	Communications Soc.	IEEE (some years)
14	B	IEEE APCC - Asia Pacific Conference on Communications	IEEE Comsoc	IEEE
15	B	IEEE ISWCS -International Symposium on Wireless Communication Systems	Vehicular Technology Soc.	ISI-WoS, IEEE
16	B	IEEE BMSB -IEEE International Symposium on Broadband Multimedia Systems and Broadcasting	IEEE BTS	IEEE
17	B	IEEE PACRIM -IEEE Pacific Rim Conference on Communications, Computers and Signal Processing	IEEE	IEEE
18	B	IEEE IWSSC -Int Workshop on Satellite and Space Communications	IEEE, ESA	IEEE
19	B	ACM IWCMC- Int Wireless Communications and Mobile Computing Conf	ACM	-
20	B	EW – European Wireless Conference		ISI-WoS
21	B	WMNC - IFIP Wireless and Mobile Networking Conference	IFIP	-
22	B	Sarnoff Symposium	IEEE	ISI-WoS, IEEE
23	C	IEEE ICSPCS -International Conference on Signal Processing and Communication Systems	IEEE	IEEE

## 4. COMPUTER ENGINEERING SECTION

### 4.1 Area: Digital and Perceptual Systems

#### 4.1.1 Research scope

Main research topics:

- 1) Perceptual and Embedded Systems: (i) Modeling formalisms for embedded systems - model-driven approaches, models of computation, behavioral models for embedded systems development, model composability and model decomposability issues, (ii) Hardware-software co-design of embedded systems - distributed execution of models, Globally-Asynchronous-Locally-Synchronous Systems, Network-on-Chip, Reconfigurable computing platforms, (iii) Sensor data processing, (iv) Perceptual systems.
- 2) Decision Support Systems and Learning: (i) Computational Intelligence - Fuzzy Set Theory, Neural networks, Evolutionary computation, Intelligent knowledge-based systems, (ii) Knowledge discovery - Machine learning principles, Clustering, Data mining, Evolving/adaptable intelligent systems, (iii) Ergonomics and safety – Ergonomics, Occupational safety.
- 3) Interoperability and Integration of Complex Systems: (i) Information Modeling for Complex Systems integration and Interoperability (ii) Knowledge Management for Complex Systems integration and Interoperability, (iii) Platforms for Complex Systems integration and Interoperability.

#### 4.1.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago
<b>Perceptual and Embedded Systems</b>						
1	A+	International Journal of Computer Vision	0920-5691	5.358	10.328	Q1
2	A+	Proceedings of the IEEE	0018-9219	4,613	6,824	Q1
3	A+	IEEE Transactions on Industrial Electronics	0278-0046	5,468	4,665	Q1
4	A+	BMC Bioinformatics	1471-2105	3.781	4.246	Q1
5	A+	ISPRS Journal of Photogrammetry and Remote Sensing	0924-2716	2.293	3.694	Q1
6	A+	Computer Vision and Image Understanding	1077-3142	2.22	2.938	Q1
7	A+	Neural Networks	0893-6080	2.656	2.838	Q1
8	A+	IEEE Transactions on Industrial Informatics	1551-3203	2,356	2,565	Q1
9	A+	IEEE Transactions on Circuits and Systems - I Regular papers	1549-8328	2,043	2,411	Q1
10	A	Spectrochimica Acta - Part B Atomic Spectroscopy	0584-8547	2,853	2,743	Q1
11	A	STATISTICS IN MEDICINE	0277-6715	2.111	2.315	Q2
12	A	IEEE Transactions on Automation Science and Engineering	1545-5955	1,929	2,1	Q2
13	A	IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems	0278-0070	1.466	1.867	Q1
14	A	Discrete Event Dynamic Systems: Theory and Applications	0924-6703	0.974	1.818	Q2
15	A	IEEE Sensors Journal	1530-437X	1.61	1.818	Q1
16	A	Medical and Biological Engineering and Computing	0140-0118	1.379	1.600	Q1
17	A	IEEE Transactions on Education	0018-9359	1,4	1,417	Q2
18	A	ACM Transactions on Design Automation of Electronic Systems	1084-4309	0.848	1.303	Q2
19	B	Journal of Systems Architecture	1383-7621	0.984	0.906	Q3

20	C	Applied Artificial Intelligence	0883-9514	0.795	0.854	Q3
21	C	Microprocessors and Microsystems	0141-9331	0.652	0.613	Q3
22	C	Journal of Universal Computer Science	0948-695X	0.488	0.484	Q2
23	C	Design Automation for Embedded Systems	0929-5585	0,909	0,481	Q3
24	C	IET Computers and Digital Techniques	1751-8601	0.316	0.316	Q2
25	C	International Journal of Electrical Engineering Education	0020-7209	0.118		
<b>Decision Support Systems and Learning</b>						
1	A+	IEEE Transactions on Fuzzy Systems	1063-6706	3,624	4,804	Q1
2	A+	Artificial Intelligence	0004-3702	3,397	4,523	Q1
3	A+	Data Mining and Knowledge Discovery	1384-5810	2,421	3,803	Q1
4	A+	IEEE Transactions on Knowledge and Data Engineering	1041-4347	2,236	3,585	Q1
5	A+	IEEE Intelligent Systems	1541-1672	2,278	3,057	Q2
6	A	Expert Systems with Applications	0957-4174	2,596	2,638	Q1
7	A	International Journal of Human-Computer Studies	1071-5819	1,769	2,513	-
8	A	Fuzzy Sets and Systems	0165-0114	1,833	2,303	Q2
9	A	Decision Support Systems	0167-9236	1,873	2,276	Q1
10	A	Information Systems	0306-4379	1,66	2,261	Q1
11	A	European Journal of Operational Research	0377-2217	1,627	2,084	Q1
12	A	Data and Knowledge Engineering	0169-023X	1,48	1,863	Q2
13	A	Engineering Applications of Artificial Intelligence	0952-1976	1,397	1,851	Q2
14	A	IEEE Transactions on Systems, Man and Cybernetics - C (Applications and Reviews)	1094-6977	1,375	1,823	Q2
15	A	European Journal of Information Systems	0960-085X	1,202	1,482	Q3
16	B	International Journal of Intelligent Systems	0884-8173	0,86	1,217	Q3
17	B	Knowledge-based Systems	0950-7051	0,924	1,103	Q3
18	B	Soft Computing	1432-7643	0,984	1,08	Q2
19	B	International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems	0218-4885	1	1,043	Q3
20	B	Applied Ergonomics	0003-6870	1.250	1.419	Q1
21	B	International Journal Of Industrial Ergonomics	0169-8141	0.760	0.995	Q1
22	C	Journal of Intelligent and Fuzzy Systems	1064-1246	0,649	0,651	Q4
23	C	I International Journal of Software Engineering and Knowledge Engineering	0218-1940	0,447	0,452	Q3
24	C	Intelligent Automation and Soft Computing International Journal	1079-8587	0,224	0,297	Q4
25	C	Human Factors And Ergonomics In Manufacturing	1090-8471	0,434	0,477	Q2
<b>Interoperability and Integration of Complex Systems</b>						
1	A+	ACM Computing Surveys	0360-0300	9,92	14,672	Q1
2	A+	MIS Quarterly: Management Information Systems	0276-7783	5,183	11,586	Q1
3	A+	Proceedings of the IEEE	0018-9219	4,613	6,824	Q1
4	A+	ACM Transactions on Information Systems	1046-8188	1,472	6,306	Q1
5	A+	Communications of the ACM	0001-0782	2,646	3,175	Q1/Q2
6	A+	IEEE Transactions on Industry Applications	0093-9994	2,058	2,812	Q1
7	A+	IEEE Transactions on Industrial Informatics	1551-3203	2,356	2,565	Q1

8	A+	Advanced Engineering Informatics	1474-0346	1,848	2,431	Q1
9	A+	Computers in Industry	0166-3615	2,014	2,338	Q1
10	A+	Information Systems	0306-4379	1,66	2,261	Q1
11	A+	Journal of Strategic Information Systems	0963-8687	1,484	2,012	Q1
12	A	IEEE Transactions on Systems, Man and Cynernetics - C (Applications and Reviews)	1094-6977	1,375	1,823	Q2
13	A	Computers and Industrial Engineering	0360-8352	1,057	1,637	Q1
14	A	International Journal of Cooperative Information Systems	0218-8430	0,714	1,585	Q2
15	A	Automation in Construction (AutoCon)	0926-5805	1,664	1,569	Q1
16	A	IEEE Transactions on Education	0018-9359	1,4	1,417	Q2
17	A	International Journal of Production Research	0020-7543	0,774	1,38	Q3
18	A	Journal of Intelligent Manufacturing (JIM)	0956-5515	1,018	1,3	Q2
19	A	Industrial Management and Data Systems	0263-5577	0,945	1,237	Q1
20	A	Open Systems and Information Dynamics	1230-1612	1,13	1,031	Q1
21	B	Journal of Systems and Software	0164-1212	1,241	1,312	Q2
22	B	International Journal Advances in Engineering Software (IJAES)	0965-9978	1,188	1,048	Q2
23	B	International Journal of General Systems	0308-1079	0,826	0,933	Q3
24	B	International Journal of Computer Integrated Manufacturing (IJCIM)	0951-192X	0,722	0,914	Q2
25	C	International Journal of Technology Management (IJTM)	0267-5730	0,526	0,684	Q3

**4.1.3 Reference conferences**

	Class	Conference title	Sponsors	Indexing
<b>Perceptional and Embedded Systems</b>				
1	A	ATPN - International Conference on Applications and Theory of Petri Nets and other models of Concurrency		ISI-WoS
2	A	ACSD - International Conference on Application of Concurrency to System Design	IEEE	ISI-WoS
3	A	IECON - Annual Conference of the IEEE Industrial Electronics Society	IEEE	ISI-WoS
4	A	ISIE - IEEE International Symposium on Industrial Electronics	IEEE	ISI-WoS
5	A	DAC - Design Automation Conference	ACM, IEEE	IEEE, ISI-WoS (some years?)
6	A	DATE - Design, Automation and Test in Europe	ACM, IEEE, IFIP, IET	ISI-WoS
7	A	INDIN - IEEE International Conference on Industrial Informatics	IEEE	ISI-WoS
8	A	IEEE Computer Society Conference on Computer Vision and Pattern Recognition	IEEE	ISI-WoS
9	A	ICIP - IEEE International Conference on Image Processing	IEEE	ISI-WoS
10	A	World Congress on Medical Physics and Biomedical Engineering	IUPESM, IOMP, IFMBE, DGMP, EFOMP, VDE	- *
11	A	IEEE International Symposium on Biomedical Imaging	IEEE	ISI-WoS
12	A	SPIE Medical Imaging	SPIE	ISI-WoS (some years)
13	A	International Conference on Computer Vision	IEEE	ISI-WoS
14	B	SIES - IEEE International Symposium on Industrial Embedded Systems	IEEE	IEEE, ISI-WoS (some years?)
15	B	CASES, CODES+ISSS, EMSOFT - Embedded Systems Week	ACM, IEEE	-
16	B	DSD - Euromicro Conference on Digital System Design	EUROMICRO, IEEE	ISI-WoS, IEEE

17	B	ISPA - International Symposium on Image and Signal Processing and Analysis	EURASIP, IEEE	ISI-WoS
18	B	International Workshop in Biomedical Image Registration		ISI-WoS
19	C	International Conference on Image and Signal Processing	IAPR, EUROSIP	ISI-WoS
<b>Decision Support Systems and Learning</b>				
1	A	WCCI- IEEE World Congress on Computational Intelligence	IEEE	ISI-WoS
2	A	ICJNN-International Joint Conference on Neural Networks		ISI-WoS
3	A	FUZZ-IEEE- IEEE International Conference on Fuzzy Systems	IEEE	ISI-WoS
4	A	CEC- IEEE Congress on Evolutionary Computation	IEEE	ISI-WoS
5	B	FLINS-Fuzzy Logic and Intelligent Technologies in Nuclear Science international conference		-
6	B	IPMU- International Conference on Information Processing and management of Uncertainty		-
7	C	EURO - European Conference on Operational Research		-
<b>Interoperability and Integration of Complex Systems</b>				
1	A+	I-ESA: Interoperability-Enterprise, Systems and Applications	IFIP	ISI-WoS (some years)
2	A+	IEEE-IS - IEEE Intelligent Systems	IEEE	IEEE, *
3	A	CE - Concurrent Engineering: Research and Applications	ISPE	- *
4	A	IDETC - ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference	ASME	ISI-WoS
5	A	SMC - IEEE International Conference on Systems, Man and Cybernetics	IEEE	ISI-WoS, IEEE
6	A	eChallenges - eChallenges Conference & Exhibition	IEEE	- *
7	A	IEEM - IEEE International Conference on Industrial Engineering and Engineering Management	IEEE	ISI-WoS, IEEE
8	A	WCC - IFIP World Computer Congress	IFIP	ISI-WoS
9	A	CIRP Design Conference	CIRP	CIRP
10	A	OTM - On The Move Conference		ISI-WoS (some years)
11	B	ICSCI - Conference on Systemics, Cybernetics and Informatics		-
12	B	ECPPM - European Conference on Product and Process Modelling in the Building and Related Industries		- *

\* Proceedings of this conference were indexed in ISI-WoS in one year.

## 4.2 Area: Manufacturing Systems and Collaborative Networks

### 4.2.1 Research scope

This area encompasses research activities on the understanding (principles and models) and support (methods, tools, and technologies) for collaborative networks and distributed architectures and systems applied to industry and services.

Main topics:

- 1) Collaborative Networks – Principles and organizational forms, Behavioral models, Reference models, Virtual organizations, Professional virtual communities, Virtual organizations breeding environments, Computational intelligence and qualitative reasoning in collaboration, Complexity thinking, Value systems, Self-healing systems, Collaborative platforms and methods.
- 2) Intelligent Manufacturing Systems – Evolvable manufacturing systems, Intelligent supervision and self-healing systems, Collaborative distributed manufacturing, Collaborative and self-organizing machine networks, Emergence, Behavior-based robotics, Human-machine interaction.
- 3) Distributed Information Systems and Integration – Federated systems, Distributed real-time pervasive systems, Pro-active service-oriented systems, Information systems modeling and integration.

### 4.2.2 Reference journals

	Class	Journal title	ISSN	Impact Factor 2008	Impact Factor 5-year	Rank SCIMago	Rank Socolnet
<b>Collaborative Networks</b>							
1	A+	IEEE Transactions on Industrial Informatics	1551-3203	2,356	2,565	Q1	A
2	A+	I. J. Advanced Engineering Informatics	1474-0346	1,848	2,431	Q1	
3	A+	Computers in industry	0166-3615	2,014	2,338	Q1	A+
4	A+	IEEE Transactions on Engineering Management	0018-9391	1,156	2,153	Q1	
5	A+	IEEE Transactions on Automation Science and Engineering	1545-5955	1,929	2,100	Q2	
6	A+	IEEE Transactions on Systems, Man, and Cybernetics Part A	1083-4427	1,350	2,095	Q1/Q2	
7	A+	TECHNOVATION	0166-4972	1,907	1,871	Q1	B
8	A+	I. J. Production Economics	0925-5273	2.026	2.767	Q1	
9	A+	J. Engineering and Technology Management	0923-4748	0.923	2.217	Q2	
10	A	Engineering Applications of Artificial Intelligence	0952-1976	1,397	1,851	Q2	
11	A	IEEE Transactions on Systems, Man, & Cybernetics, Part C	1094-6977	1,375	1,823	Q1/Q2	A
12	A	Journal Computers & Industrial Engineering	0360-8352	1,057	1,637	Q1	A
13	A	I. J. Cooperative Information Systems	0218-8430	0,714	1,585	Q2	
14	A	J. Robotics & Computer Integrated Manufacturing	0736-5845	1,371	1,564	Q1	B
15	A	Int. Journal Production Research	0020-7543	0,774	1,380	Q3	A+
16	A	J. Future Generation Computer Systems	0167-739X	1,476	1,377	Q2	B
17	A	Journal Intelligent Manufacturing	0956-5515	1,018	1,300	Q2	A+
18	A	J. Production Planning & Control	0953-7287	0,597	1,045	Q2	A
19	B	Journal of Systems and Software	0164-1212	1,241	1,312	Q2	
20	B	Industrial Management and Data Systems	0263-5577	0,945	1,237	Q1	
21	B	Internet Research	1066-2243	0,800	1,157	Q2	
22	B	Annual Reviews in Control	1367-5788	1,109	1,109	Q2	C
23	B	I. J. Computer Integrated Manufacturing	0951-192X	0,722	0,914	Q2	A
24	B	J. Information Systems Frontiers	1387-3326	0,706	0,781	Q3	B

25	B	Advances in Complex Systems	0219-5259	0,197	0,708	Q1	
<b>Intelligent Manufacturing Systems</b>							
1	A+	IEEE Transactions on Robotics	1552-3098	2.656	3.751	Q1	
2	A+	Autonomous Agents and Multi-agent Systems	1387-2532	2.125	2.835	Q1	
3	A+	IEEE Transactions on Industrial Informatics	1551-3203	2,356	2,565	Q1	A
4	A+	I. J. Advanced Engineering Informatics	1474-0346	1,848	2,431	Q1	
5	A+	Computers in industry	0166-3615	2,014	2,338	Q1	A+
6	A+	IEEE Transactions on Automation Science and Engineering	1545-5955	1,929	2,100	Q2	
7	A+	IEEE Intelligent Systems	1541-1672	2.278	3.057	Q2	
8	A+	IEEE Transactions on Systems, Man, and Cybernetics Part A	1083-4427	1,350	2,095	Q1/Q2	
9	A	Autonomous Robots	0929-5593	1.500	2.293	Q2	
10	A	Engineering Applications of Artificial Intelligence	0952-1976	1.397	1.851	Q2	
11	A	IEEE Transactions on Systems, Man, & Cybernetics, Part C	1094-6977	1,375	1,823	Q1/Q2	A
12	A	Intelligent and Robotic Systems (former Robotics and Autonomous Systems)	0166-4972	1,214	1,789	Q3	
13	A	Journal Computers & Industrial Engineering	0360-8352	1,057	1,637	Q1	A
14	A	J. Robotics & Computer Integrated Manufacturing	0736-5845	1,371	1,564	Q1	B
15	A	Mechatronics	09574158	1.434	1.578	Q2	
16	A	CIRP Annals - Manufacturing Technology	00078506	1.123	1.514	Q1	
17	A	Int. Journal Production Research	0020-7543	0,774	1,380	Q3	A+
18	A	Journal Intelligent Manufacturing	0956-5515	1,018	1,300	Q2	A+
19	A	J. Production Planning & Control	0953-7287	0,597	1,045	Q2	A
20	B	International Journal of Flexible Manufacturing Systems	0920-6299	1.044	1.455	-	
21	B	International Journal of Intelligent Systems	0884-8173	0,860	1,217	Q3	
22	B	Annual Reviews in Control	1367-5788	1,109	1,109	Q2	C
23	B	I. J. Computer Integrated Manufacturing	0951-192X	0,722	0,914	Q2	A
24	B	AI EDAM - Artificial Intelligence for Engineering Design, Analysis and Manufacturing	0890-0604	0.477	1.049	Q2/Q3	
25	B	Robotica (Cambridge Univ Press)	0263-5747	0.781	0.983	Q2	
26	C	J. Assembly Automation	0144-5154	0,382	0,426	Q2	
<b>Distributed Information Systems and Integration</b>							
1	A+	MIS Quarterly: Management Information Systems	0276-7783	5,183	11,586	Q1	
2	A+	IEEE Transactions on Industrial Electronics	0278-0046	5,468	4,665	Q1	
3	A+	IEEE Transactions on Knowledge and Data Engineering	1041-4347	2.236	3.585	Q1	
4	A+	IEEE Intelligent Systems	1541-1672	2.278	3.057	Q2	
5	A+	Expert Systems with Applications	0957-4174	2.596	2.638	Q1/Q2	
6	A+	IEEE Pervasive Computing	1536-1268	2.615	4.159	Q1	
7	A+	IEEE Transactions on Industrial Informatics	1551-3203	2,356	2,565	Q1	A
8	A+	I. J. Advanced Engineering Informatics	1474-0346	1,848	2,431	Q1	
9	A+	Advanced Engineering Informatics	1474-0346	1,848	2,431	Q1	
10	A+	Computers in industry	0166-3615	2,014	2,338	Q1	A+
11	A+	IEEE Transactions on Automation Science and Engineering	1545-5955	1,929	2,100	Q2	
12	A+	IEEE Transactions on Systems, Man, and Cybernetics Part A	1083-4427	1,350	2,095	Q1/Q2	
13	A+	Journal of Strategic Information Systems	0963-8687	1,484	2,012	Q1	

14	A+	Data & Knowledge Engineering	0169-023X	1,480	1,863	Q1	A
15	A	Engineering Applications of Artificial Intelligence	0952-1976	1.397	1.851	Q2	
16	A	IEEE Transactions on Systems, Man, & Cybernetics, Part C	1094-6977	1,375	1,823	Q1/Q2	A
17	A	Knowledge and Information Systems	02191377	1.733		Q1	
18	A	Journal Computers & Industrial Engineering	0360-8352	1,057	1,637	Q1	A
19	A	I. J. Cooperative Information Systems	0218-8430	0,714	1,585	Q2	
20	A	J. Future Generation Computer Systems	0167-739X	1,476	1,377	Q2	B
21	A	Industrial Management and Data Systems	0263-5577	0.945	1,237	Q1	
22	B	J. Information Systems Frontiers	1387-3326	0,706	0,781	Q3	B
23	B	Personal and Ubiquitous Computing	1617-4909	0.865		Q1/Q2	
24	B	Applied Artificial Intelligence	0883-9514	0.795	0.854	Q3	
25	C	Intelligent Data Analysis	1088-467X	0.426		Q3	

### 4.2.3 Reference conferences

Class	Conference title	Sponsors	Indexing
<b>Collaborative Networks</b>			
1	A+	PRO-VE – IFIP Working Conference on Virtual Enterprises	IFIP, Socolnet
2	A+	DEXA - International Conference on Database and Expert Systems Applications	
3	A	CTS - International Symposium on Collaborative Technologies and Systems	ACM, IEEE
4	A	SMC - IEEE International Conference on Systems, Man and Cybernetics	IEEE
5	A	BASYS – IFIP Working Conference on Information Technology Balanced Automation	IFIP, Socolnet
6	A	DEST - Int Conf on Digital Ecosystems and Technologies	IEEE
7	A	ETFA - Int. Conf. On Emerging Technologies and Factory Automation	IEEE
8	A	SASO – IEEE International Conference on Self-Adaptive and Self-Organising Systems	IEEE
9	A	SAINT - Symposium on Applications and the Internet	IEEE
10	A	CSCWD - International Conference on Computer Supported Cooperative Work in Design	IEEE
11	A	INDIN – IEEE International Conference on Industrial Informatics	IEEE
12	B	APMS - International Conference on Advances in Production Management Systems	IFIP
13	B	DET- International CIRP Conference in Digital Enterprise Technology	CIRP
14	B	INCOM - IFAC Symposium on Information Control Problems in Manufacturing	IFAC
15	B	CoopIS - International Conference on Knowledge-Based Intelligent Information & Engineering Systems	
16	B	PROLAMAT – IFIP Conference of the International Federation for Information Processing	IFIP
	B	ICEGOV – International Conference on Theory and Practice of Electronic Governance	ACM
17	C	HOLOMAS – International Conference on Applications of Holonic and Multiagent Systems	IEEE, I-PROMS
18	C	IMS – Intelligent Manufacturing Systems	IFAC
19	C	ICEIS - International Conference on Enterprise Information Systems	
<b>Intelligent Manufacturing Systems</b>			
1	A+	CASE – IEEE Conference on Automation Science and Engineering	IEEE
2	A+	ICRA – IEEE Conference on Robotics and Automation	IEEE
3	A+	PRO-VE – IFIP Working Conference on Virtual Enterprises	IFIP, Socolnet

4	A	SMC - IEEE International Conference on Systems, Man and Cybernetics	IEEE	ISI-WoS, IEEE
5	A	SASO – IEEE International Conference on Self-Adaptive and Self-Organising	IEEE	ISI-WoS (some years), IEEE
6	A	IROS – International Conference on Intelligent Robots and Systems	IEEE	ISI-WoS, IEEE
7	A	INDIN – IEEE International Conference on Industrial Informatics	IEEE	ISI-WoS, IEEE
8	A	ETFA - Int. Conf. On Emerging Technologies and Factory Automation	IEEE	IEEE
9	A	IECON - Annual Conference of the IEEE Industrial Electronics Society	IEEE	ISI-WoS, IEEE
10	A	ISIE – IEEE International Symposium on Industrial Electronics	IEEE	ISI-WoS, IEEE
11	A	BASYS – IFIP Working Conference on Information Technology Balanced Automation	IFIP, Socolnet	ISI-WoS
12	B	AAMAS - Autonomous Agents and Multi-agent Systems	FIPA	-
13	B	DET- International CIRP Conference in Digital Enterprise Technology	CIRP	ISI-WoS
14	B	PROLAMAT – IFIP Conference of the International Federation for Information Processing	IFIP	ISI-WoS
15	B	INCOM - IFAC Symposium on Information Control Problems in Manufacturing	IFAC	-
16	B	ISAM - IEEE International Symposium on Assembly and Manufacturing	IEEE	IEEE
17	C	HOLOMAS – International Conference on Applications of Holonic and Multiagent Systems	IEEE, I-PROMS	-
18	C	SYROCO - IFAC Symposium on Robot Control	IFAC	- *
19	C	IMS – Intelligent Manufacturing Systems	IFAC	- *
20	C	ICEIS - International Conference on Enterprise Information Systems	INSTICC	- *
<b>Distributed Information Systems and Integration</b>				
1	A+	PRO-VE – IFIP Working Conference on Virtual Enterprises	IFIP, Socolnet	ISI-WoS
2	A+	DEXA - International Conference on Database and Expert Systems Applications		ISI-WoS
3	A+	CASE – IEEE Conference on Automation Science and Engineering	IEEE	ISI-WoS, IEEE
4	A	SMC - IEEE International Conference on Systems, Man and Cybernetics	IEEE	ISI-WoS, IEEE
5	A	BASYS – IFIP Working Conference on Information Technology Balanced Automation	IFIP, Socolnet	ISI-WoS
6	A	DEST - Int Conf on Digital Ecosystems and Technologies	IEEE	IEEE
7	A	ETFA - Int. Conf. On Emerging Technologies and Factory Automation	IEEE	ISI-WoS, IEEE
8	A	SASO – IEEE International Conference on Self-Adaptive and Self-Organising Systems	IEEE	ISI-WoS, IEEE
9	A	SAINT - Symposium on Applications and the Internet	IEEE	ISI-WoS, IEEE
10	A	WCC - IFIP World Computer Congress	IFIP	ISI-WoS
11	A	INDIN – IEEE International Conference on Industrial Informatics	IEEE	ISI-WoS, IEEE
12	A	FUZZ-IEEE- IEEE International Conference on Fuzzy Systems	IEEE	ISI-WoS
13	A	IECON - Annual Conference of the IEEE Industrial Electronics Society	IEEE	ISI-WoS, IEEE
14	A	KES - International Conference on Knowledge-Based Intelligent Information and Engineering Systems		ISI-WoS
15	B	DET- International CIRP Conference in Digital Enterprise Technology	CIRP	ISI-WoS
16	B	INCOM - IFAC Symposium on Information Control Problems in Manufacturing	IFAC	-
17	B	PROLAMAT – IFIP Conference of the International Federation for Information Processing	IFIP	ISI-WoS
18	B	CoopIS - International Conference on Knowledge-Based Intelligent Information & Engineering Systems		ISI-WoS (some years)
19	B	EKAW - International Conference on Knowledge Engineering and Knowledge Management		ISI-WoS (some years)
20	C	ICEIS - International Conference on Enterprise Information Systems	INSTICC	- *

\* Proceedings of this conference were indexed in ISI-WoS in one year.