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Miscellanea

Photonics Letters – a new, peer reviewed internet publication

Warsaw, August 2008

The global scientific publications market, especially in technical sciences, is subject, during the last years, to an essential reconfiguration. There are observed the biggest changes ever since several decades. These changes embrace: a considerable increase in the number of journals of the global impact, emerging of new research branches and accompanying, relevant journals (for example: biophotonics, THz technology, metamaterials, optics of negative refraction, etc.), a fast, evolutionary 'internetization' of scientific journals, with all consequences of this process (leading very probably in the near future to the confinement of the role of pure text and classical figures on behalf of dynamic multimedia presentations of the research results), and a complete change of bibliometric tools – measuring the objective value of the publications. The consequences of these changes are irreversible. The market of strictly scientific publications resigns irretrievably from the static evaluation of the value of published work, as well as from the paper versions of the journal issues. These processes go non dependently on the strength of the sentiments of classical, analog publishers and authors. To stop the remaining doubts, one can say that the costs will ultimately decide. The digital publications are an order of magnitude cheaper than the analog ones.

Trying to keep the pace with these revolutionary changes of the publications methods and tools, ruling the new market, the Photonics Society of Poland – PSP, [http://photonics.pl] has launched, since the second half of 2008, a new, peer reviewed, research and engineering, Internet based, fast publishing journal "Photonics Letters" [photonics.pl/PL].

The journal Photonics Letters is a publication issued only in the Internet, without any paper copy. According to the PSP estimate, only such a publication initiative for a journal, issued digitally, very versatile, and published extremely fast, has a real chance for a success on a very dense, difficult, and competitive global publishing market. During the initial period, the Photonics Letters journal will be issued as quarterly, next bimonthly and monthly. Biweekly issue is also not excluded, as the ultimate aim. The publication time for an Author will be, however, much shorter. Two first issues of Photonics Letters will be published in 2008 embracing the third and the fourth quarters of the year. The journal aspires to the high class of peer reviewed, fast, short, letter type publications, functioning since not very long in the Internet, under a general name – rapid Internet publications. The pattern publications are issued in electronics and photonics by professional associations of global reach like SPIE, IEEE, OSA, for example Electronics Letters, Photonics Technology Letters, Optics Letters, etc. The journal accepts for publication short work, not extending over four pages of text, prepared according to a two-column format analogous to the one published by IEEE Transactions. The submitted work should have the structure of a full journal paper.

The journal covers the topical areas of optics, optoelectronics and photonics in the following aspects: fundamental and applied research, physics and technical, materials, components and devices, circuits and systems, technological and design, construction and manufacturing, and metrological. In particular these are the following areas of the photonics: theory and experiment, quantum, photon physics, ultra-low power, atto-watt, single photon, ultrafast, femto- and atto-second, high power, high intensity, tera-watt and peta-watt, nonlinear, integrated and planar as well as volume, information, image, lighting, photovoltaic, semiconductor, laser, terahertz – THz, IR, UV, synchrotron, roentgen, free electron lasers, optical fiber, communications, sensors and instrumentation, biomedical, chemical and environmental, industrial and engineering, synthesis and processing of materials, and educational. The journal also embraces all kinds of experiments of interaction of a photon beam with matter, as well as the usage of photonics in high energy physics experiments and astro-particle physics and astronomy. A very current subject, embraced by the journal, is synthesis of metamaterials for photonics, and in particular research on meta-glasses and their applications. This research leads to a negative refraction optics.

The journal also covers neighboring regions to the above mentioned ones. Photonics Letters accepts all work concerning construction of research and application systems: metrological, automation and robotics, astronomical, chemical, biomedical, for food and agriculture industry, environmental monitoring, mechatronic, electronic, nano- and microsystems, and everywhere the photonics is a functional part of a bigger unity. The functions played by photonics may embrace sensors, metrology, data transmission channels, EM wave energy delivery, and other types of functional compo-

nents and subassemblies, etc. One can mention the following exemplary systems: application specific 3D imaging devices, integrated processors of the type – lab on chip, lab on fiber (capillary), MOEMS, MEMS, THz imaging, transmission with quantum coding, optical gauges of time, frequency and distance, devices made of metamaterials and photonic crystals, etc.

The journal embraces also the integration problems of photonic components, devices and circuits with the analogous, accompanying, functional devices of electronics and mechatronics. There is a considerable interest in simultaneous coexistence of photonic, electrical and mechanical signals in a single integrated micro-system. It also concerns other kinds of signals like chemical, biological, including biophotonics, as well as signal conversion and processing, functional integration, packaging of components and devices, construction, small scale manufacturing, etc. The journal covers all aspects of the software accompanying the theoretical and design work as well as hardware solutions. There are two main aspects of software: calculation software for modeling of photonic effects and phenomena in materials and components as well as functional software for servicing the photonic devices and systems as well as mixed integrated systems consisting of photonics, electronics and mechatronics.

The journal accepts for publications only original, fast, i.e. very current, research and technical work reports, prepared in a form of a short, fully structured paper. There are accepted the following forms of work and topics: laboratory reports, engineering solutions, calculation results, modeling, laboratory demonstration and technical work descriptions, application examples, new components and devices, processing of optical signals, signal conversion, new and modified sensor solutions, technical descriptions, methods of demonstration of photonic effects, dynamic documentation of laboratory work - specific for new multimedia Internet tools, material description for photonic applications, photonic measurements, microscopy, digital holography, optical memories, photonic processors, maintenance and exploitation of photonic apparatus, reliability nd ruggedness of apparatus, apparatus survivability in benign and adverse work environment, specificity of industrial apparatus, design notes, application notes for photonic components, research remarks and debates, authors responses, system integration between photonics – electronics and mechatronics, hardware – software integration, practical advances in the construction of micro-systems including moems, betterment of imaging techniques in different spectrum regions, software for photonic and mixed integrated devices and systems. In the above sense, the main area of the journal activity is applied science and technology, as well as developments of practical engineering.

Despite the initial organization of the journal as quarterly, the basic intention of the PSP as the journal publisher, and the editorial board of Photonics Letters, is to provide the Authors with a very fast path to the peer reviewed, high quality, Internet publication. The aim is to reach two weeks from the paper submission to the publication on-line. This would be possible only via a complete automation of the submission, refereeing and paper verification processes. After the acceptance, the work would be immediately, with no delay, published on-line on the webpage of the journal. Each paper would be checked obligatory by two reviewers. Apart from classical text with figures, the journal intends to publish accompanying auxiliary multimedia files in a form of additional still and animated graphics, audio comments, and video recordings of the experiment. Possibly, in the future, the text form would be only a formal addition to the full multimedia record of the work for the publication.

Launching of a completely new publication, in a very attractive field, is an extremely challenging task now, and is usually a result of long series of negotiations on the local, national level as well as international and global levels. Locally in Poland, the agreements concerned social, professional organizations, research institutions, universities, industry, government and business, as well as key persons, representing this very dynamically developing branch of science and technology, which is now photonics. The consulted national organizations, relevant to the publication of Photonics Letters, embraced among others: Polish Academy of Sciences (PAN), Division IV of Technical Sciences, Committee of Electronics and Telecommunications, Section of Optoelectronics; Association of Polish Electrical Engineers (SEP), Polish Committee of Optoelectronics; Polish Physical Society, Section of Optics; and a number of other professional organizations of topical relevance. The consultations embraced also the following schools and industrial and business organizations: governmental laboratories, faculties of physics, electronics, IT, electrical engineering, mechatronics of universities and some private businesses. The consultations are continued with other Committees of the Polish Academy of Sciences including: Astronomy, Physics, Metrology and Research Apparatus, Electrical Engineering, Bio-cybernetics and Biomedical Engineering, and others. Photonics Society of Poland counts seriously on close interaction in publishing domain with other professional research and technical societies, and in particular with the Association of Polish Electrical Engineers.

On the international level, the problem of consultation of such a big initiative, like launching of a new journal of a global extent, is much more complex than locally. There are carried out, by the PSP, intense and advanced consultations with SPIE – The International Society for Optical Engineering [spie.org]. The reason of proposed cooperation concerning the journal are close, friendly, and profitable, spanning over more than two decades, and effective relations between SPIE Poland Chapter [spie.pl] and SPIE. The PSP is a direct continuator of SPIE Poland Chapter. a participation of SPIE in launching the journal gives to it immediately a global character. Guarantee of a success of this large undertaking, in the cooperation between PSP and SPIE, is a great, positive record of this cooperation spanning over the last quarter of the century.

The guarantee of a success for such a complex initiative in cooperation between PSP and SPIE, a local and a global photonics society, is a great product of this cooperation spanning over a quarter of the century. The results of this co-

operation are: publishing of over than 200 volumes of Proc. SPIE from the international technical conferences on photonics organized in Poland, cooperation on publishing of next 100 volumes of Proc. SPIE from the international conferences organized elsewhere, common organization, with SPIE, in 2005, in Warsaw, of an International Congress on Optics and Optoelectronics, which gathered around 1000 professional participants, etc. Apart from close consultations with SPIE, the PSP which has quite a recognition of the European photonics market, consults launching of the new Internet publication with photonics associations in the neighboring countries.

The decision of launching of Photonics Letters is supported, on the international level, by a number of developmental processes concerning the photonics in the global scale. The photonics is subject to a further dynamic development, much faster than other related branches of the industry. This industrial and related research development trend is supported by a few powerful application pillars. These pillars are: optical communications, reborn with only marginal losses after a serious crisis a few years ago, precision metrology offered by lasers and interferometry, continuously extending applications of lasers, imaging techniques in medicine, and sensors and integrated instrumental systems of moems type. Other observed process is a maturing reconstruction and integration of the research and technical professional community of photonics in the global scale. A particular layer of this integration is a different view now on the cooperation, and its strongly synergetic role, between professional societies acting in local and global scales. a perfect example of this is profitable, long-lasting cooperation between PSP and SPIE.

The local aims of PSP concerning launching of Photonics Letters are: building of a strong, international societal journal; making more active the local engineering community of photonics; strengthening of the ties of this community with analogous local communities in Europe; globalization of the local activities; increasing the cooperation with industry and national economy; tracing and participation in the development of the current research direction of photonics; promotion of these directions locally; stimulation of applied research in photonics for the local economy.

One of the main motivations to launch own journal was the recent transformation from SPIE Poland Chapter to the Photonics Society of Poland. SPIE Poland Chapter acted for the last twenty years as a legally registered technical professional society. Transformation of the name was approved by the administrative court on 2007/08. The society is highly evaluated by the local professional community due to its intense activities on behalf of its members. Locally, the major aim of Photonics Letters journal is to open a possibility of fast, peer reviewed publications with a wide international indexing. A number of authors of valuable work tend to publish the results locally, assuming proper level of the journal and global indexing. Despite the global access to the journal it is treated as a local one. One of the ideas of globalization of the new journal uses this authors' psychology. The idea is to build a global journal, in the future, by launching a network of combined local editions.

PSP intends to introduce the new journal, in a close cooperation with SPIE and national research and technical community of photonics, to be indexed by the ISI-Thomson and other key indexes and scientific publication databases like: Scopus, Scholar, Scirus, Scitopia, etc. The intentions of PSP as a main publisher of Photonics Letters is a close cooperation in Poland with the publishers of the other two important, strictly photonics journals, which are indexed by the ISI-Thomson. These are: Optica Applicata - published by the Faculty of Physics, Wrocław University of Technology and Opto-Electronics Review published by the Military University of Technology, SEP and Elsevier. Cooperation and usage of synergy in the publishing activities of all of these journals may base on utilizing of the new specificity of the fast Internet publication to strengthen the archival journals publishing the work results in extenso. These journals are also subject to the evolution towards Internet based publications. They publish much longer papers, usually being a full documentation of concrete experiments, construction of new apparatus, thus, this kind of publication will never be so fast as a publication of 'letter' type on-line.

The aims of PSP concerning the European and global photonics communities, related to launching the Photonics Letters are: strengthening and extending the cooperation with SPIE, and considerable internationalization of this cooperation, building a strong international photonic journal of clearly European character and simultaneously very global impact; extension of European cooperation between local associations; trial to create around the journal a wider scientific and technical platform for international cooperation and debate; built in and active participation of PSP in the global photonics publications market, etc.

The invited editorial board of Photonics Letters has members from Poland and international ones. The Board consists of the leaders of large research and technical laboratories in photonics of a considerable scientific impact in the global scale. The individual persons declared active participation in launching and building of the new journal. Each person is responsible for a particular area of photonics, usually associated with the specialty of the represented laboratory.

Photonics Society of Poland and Editorial Board of Photonics Letters has recently made a number of initial steps towards practical launching of the journal. The initial make-up of the Editorial Board was decided. The first web page of the journal was launched containing the basic technical information. This page will be transformed in direction of a fully functional submission and on-line data base machine in the analogous style as MySPIE, eXplore, OpticsInfoBase or Versita. A call was announced for the first two issues of the journal. There are continued further consultations, domestic and international concerning the launching and maintaining of the journal, and building of its unique identity.

Photonics Society of Poland encourages the prospective Authors to publish the results of their research and technical work in the new, peer reviewed, rapid Internet journal 'Photonics Letters'.

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