Formation, development and features of English-language issues of the journal “Computer Optics”

D Kudryashov

1Samara National Research University, Moskovskoye shosse 34, Samara, Russia, 443086

e-mail: red_ko@smr.ru

Abstract. In the following paper I present the results of the publication of english-language issues of the journal “Computer Optics” in 1989-1990 and the key takeaways of the resumption of its publication in 2016-2017 in English. I also provide information about a “gift” edition of Computer Optics containing selected papers issued over a certain period of time.

1. Introduction
In 2017, we marked the thirtieth anniversary from the date of the first issue of the international collected edition of Computer Optics and ten years of its operation as a scientific journal [1]. A total of 79 issues (41 volumes) were published during this period. This international collected edition has become an academic journal and it has been published four times a year since 2007. Since 2016, six issues have been annually published [2].

Throughout its existence, the journal of Computer Optics has been publishing authors not only from Russian universities and research institutes, but also from abroad. Since 1992, Samara State Aerospace University (now Samara University) together with the Image Processing Systems Institute of the Russian Academy of Sciences (IPSI RAS, now it’s the Branch of the “Crystallography and Photonics” Federal Research and Development Center of the RAS), have assumed commitment to the publication of the journal.

2. Computer Optics during the Pergamon Press period
Pergamon Press has expressed an active interest in publishing the collected edition in English since the first issue of the journal of Computer Optics was published. In 1989, the publishing house issued the collected edition of Computer Optics was published. In English with its distribution worldwide (the front page of the journal’s cover stated: Oxford – New York – Beijing – Frankfurt – Sao Paolo – Sydney – Tokyo – Toronto) [2]. The English-language issue included the papers from the first issue of Computer Optics for 1987 in Russian.

A year later, two more issues of Computer Optics (vol. 2, issue 1 and vol. 2, issue 2) were published in English and distributed worldwide. The first English-language issue was in line with the Russian version of Computer Optics No. 3 dd 1988. The second English-language issue, published in 1990, included papers from the Russian collected edition of Computer Optics No. 4 dd 1989. These English-language issues became available in the scientific electronic library on elibrary.ru only in 2015, whereas the papers themselves were bound to the existing authors’ profiles.

A multi-subject article written by I.N. Sisakyan and V.A. Soifer, entitled “Computer Optics: Achievements and Problems” [3], was the first paper of Issue 1 published both in Russian and in English. It determined development tendencies in this academic field for many years to come. “This
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paper remained the main monograph on computer and diffraction optics until fundamental 
monographs appeared" [4].

The following leading scientists from the former Soviet Union, who worked on computer optics at 
that time, were the authors of Issue 1 of this edition: A.M. Prokhorov, A.E. Bereznyi, M.A. Vorontsov, 
M.A. Gan, M.A. Golub, G.I. Greisukh, A.V. Goncharsky, V.A. Danilov, I.M. Efimenko, N.L. 
Kazanskiy, B.E. Kimber, D.D. Klovskiy, S.G. Krivoslykov, V.V. Popov, S.A. Stepanov, A.B. 
Schwartzburg, S.M. Shirokov, and others. Some papers became the first publications in the new fields 
of computer optics such as: formation of optical elements and systems for forming required radiation 
patterns, analysis of diffractive optical elements using computational experiment techniques, 
microrelief imaging techniques for diffractive optical elements. They were a starting point in the 
development of the above mentioned academic fields. They also contributed to the publication of a 
number of papers appeared both in the journal of Computer Optics and in some leading Russian and 
foreign periodicals [4].

The fact that this research paper appeared in English in Pergamon Press has raised the journal at the 
international level. This would allow us to involve foreign authors to publish their research papers in 
this periodical. However, the coming 1990s were politically and economically very difficult not only 
for the Russian science, but also for the whole country. As a result, there were no opportunities to 
publish the journal in English because of financial difficulties. The most important thing was to retain 
the publication of the journal of Computer Optics in its original Russian-language version at least once 
a year. So this task was eventually achieved despite the fact that in 1994 the journal was never issued 
at all.

The most articles published in English issues of Computer Optics for the period from 1989 through 
1990 was written by I.N. Sisakyan (1938-1995), who was one of the initiators and organizers of the 
publishation of Computer Optics in 1987 [5, 6]. In those years, I.N. Sisakyan closely cooperated with 
Kuibyshev Aviation Institute (now Samara University) and in 1988 he was one of those who 
established the Samara Department of the Central Design Bureau of Unique Instrumentation (CDB 
UI), on the basis of which IPSI RAS was formed in 1993 [7].

I.N. Sisakyan’s academic writings [8, 9, 10], published both in English-language issues of 
Computer Optics (including those ones written in co-authorship) and in the original Russian-language 
version, are well cited by many scholars up to now [11, 12].

3. Computer Optics Selected Papers
Twenty five years later, the editorial board of the journal decided to resume the publication of 
Computer Optics in English using its own funds and resources. A special English-language issue of 
Computer Optics entitled Computer Optics Selected Papers was published at the end of 2015 [13]. It 
contained 22 papers published in the Russian-language version of the journal in the last three years, 
including a highly cited review paper written by N.Yu. Ilyasova focused on methods of digital analysis 
of a human vascular system [14].

The special issue of Computer Optics was compiled from selected materials: authors, who wished 
to publish their papers in English, submitted their original publications in Russian. One of the 
conditions for the publication was that a paper shouldn’t have been published in English in the same 
form before.

Computer Optics Selected Papers was the first attempt of the publication of the journal for a 
foreign academic community. For this purpose, the publishing division of the editorial staff was 
expanded and a new design template was specially developed for Computer Optics, fitting for the 
present world trend of scientific periodicals (Figure 1).

In order to provide a proper level and quality of English-language publications in accordance with 
international standards, a professional English-speaking translator, specializing in technical 
translation, has been involved for text translations.

The experience from the publication of the special issue of Computer Optics Selected Papers in 
2015 was successful, so for which reason it was agreed to publish it in 2016 and 2017. The special 
issue included the translated versions of original Russian-language papers over the previous years.
The edition of Computer Optics Selected Papers in English, a part of which was sent out to leading scholars from abroad, helped attract foreign authors to publish their academic writings in current issues of the journal of Computer Optics and to participate in the Annual International Conference “Information Technology and Nanotechnology” [15,16,17].

What’s more, the journal is constantly distributed at different relevant international conferences and seminars with increasing success.

4. Computer Optics in 2016-2017

One of the tasks on the development and promotion of the journal “Computer Optics” stated by its editor-in-chief V.A. Soifer in his article “Quo vadis” [18] was the necessity to propel the journal at the international level, to attract more authors from abroad and to publish original English-language papers. In this regard, the journal’s editorial board decided to publish the fifth issue for 2016 (there were totally six issues) completely in English. It was necessary to publish papers in the original English language not least because at the end of 2015 the journal “Computer Optics” was included into the list of 650 Russian academic journals, which were the most requested both in Russia and abroad. They are available at the Web of Science platform in a separate, but completely integrated with Web of Science, Russian Science Citation Index (RSCI) database.

Two highly cited review papers were published in the English version [19, 20], including that one written with the involvement of the famous scholar from abroad O. Korotkova (the University of Miami, Florida, USA). The issue also included papers written by scholars from Germany [21], Austria, France [22], Pakistan [23], and Poland [24]. Most of the papers contained in the issue have a high level of citation in international research databases.

Right after the publication of Computer Optics, Issue 5, Volume 40, in English, the editorial board began to receive letters from scholars with a request to publish their English-language papers. This resulted in the preparation and publication of one more similar issue (Volume 41, Issue 4) in 2017, which included original papers written not only by Russian scholars, but also by authors from India [25], Austria [26], Palestine [27], and Germany [28].

Since the editorial board of the journal assigns not only an open access to papers published in Computer Optics, but also compliance with publication deadlines (on average, 90 days from the date of receipt of a paper by the editorial board), it was agreed by the editorial staff that the publication of only one English-language issue per year was not enough. However, it made no sense to postpone the publication of received papers too long – for 2018. That’s why they were published in Issue 6 in 2017 [29,30]. Some leading scholars from USA were involved to writing these papers.

The publication of English-language papers significantly expanded the range of authors, including those ones from abroad. Thereby, this substantially reduced the number of papers affiliated with the
journal’s founders – Samara University and the Image Processing Systems Institute of the Russian Academy of Sciences (IPSI RAS).

The number of English-language papers to be issued in Computer Optics should be increased from 2018. They will be published in accordance with a schedule of manuscript submission to the journal’s editorial board. Therefore, there will be no need to publish a full edition of original English-language papers. In future, it would be possible to launch the journal completely in a foreign language with the publication of original research papers.

5. Conclusion

English-language issues of the journal of Computer Optics, in which the latest scientific achievements of the Samara region and some other regions of Russia were published, will help English-speaking scholars to get acquainted not only with this periodical, but also with the recent scientific advances in our country. Thus the publication of English-language issues certainly offers the journal of Computer Optics great opportunities, including those ones in scientific and information space. Editorial board is going to present some important papers [31-45] in English.

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