

# An Indexed Bibliography of Genetic Algorithms with Lasers

compiled by

**Jarmo T. Alander**

Department of Electrical Engineering and Automation

University of Vaasa P.O. Box 700, FIN-65101 Vaasa, Finland

phone: +358-6-324 8444, fax: +358-6-324 8467

*Dedicated to Donald G. Burkhard and David L. Shealy*

Report Series No. 94-1-LASER

(DRAFT 2008/08/27 10:08 )

available via anonymous ftp: site <ftp://ftp.uvasa.fi> directory `cs/report94-1` file `gaLASERbib.pdf`

Copyright © 1994-2008 Jarmo T. Alander

## **Trademarks**

Product and company names listed are trademarks or trade names of their respective companies.

## **Warning**

While this bibliography has been compiled with the utmost care, the editor takes no responsibility for any errors, missing information, the contents or quality of the references, nor for the usefulness and/or the consequences of their application. The fact that a reference is included in this publication does not imply a recommendation. The use of any of the methods in the references is entirely at the user's own responsibility. Especially the above warning applies to those references that are marked by trailing '†' (or '\*'), which are the ones that the editor has unfortunately not had the opportunity to read. An abstract was available of the references marked with '\*'.

# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Preface</b>   | <b>1</b>  |
| 1.1      | Your contributions erroneous or missing? . . . . .     | 2         |
| 1.1.1    | How to cite this report? . . . . .                     | 2         |
| 1.2      | How to get this report via <b>Internet</b> ? . . . . . | 2         |
| 1.3      | Acknowledgement . . . . .                              | 2         |
| <b>2</b> | <b>Introduction</b>                                    | <b>4</b>  |
| <b>3</b> | <b>Statistical summaries</b>                           | <b>5</b>  |
| 3.1      | Publication type . . . . .                             | 5         |
| 3.2      | Annual distribution . . . . .                          | 5         |
| 3.3      | Classification . . . . .                               | 5         |
| 3.4      | Authors . . . . .                                      | 6         |
| 3.5      | Geographical distribution . . . . .                    | 7         |
| 3.6      | Conclusions and future . . . . .                       | 7         |
| <b>4</b> | <b>Indexes</b>   | <b>9</b>  |
| 4.1      | Books . . . . .  | 9         |
| 4.2      | Journal articles . . . . .                             | 9         |
| 4.3      | Theses . . . . .                                       | 9         |
| 4.3.1    | PhD theses . . . . .                                   | 9         |
| 4.3.2    | Master's theses . . . . .                              | 9         |
| 4.4      | Report series . . . . .                                | 9         |
| 4.5      | Patents . . . . .                                      | 10        |
| 4.6      | Authors . . . . .                                      | 11        |
| 4.7      | Subject index . . . . .                                | 13        |
| 4.8      | Annual index . . . . .                                 | 15        |
| 4.9      | Geographical index . . . . .                           | 16        |
| <b>5</b> | <b>Permuted title index</b>                            | <b>17</b> |
|          | <b>Bibliography</b>                                    | <b>21</b> |
|          | <b>Appendixes</b>                                      | <b>27</b> |
| <b>A</b> | <b>Abbreviations</b>                                   | <b>27</b> |
| <b>B</b> | <b>Bibliography entry formats</b>                      | <b>28</b> |

# List of Tables

|     |  |    |
|-----|--|----|
| 2.1 | Queries used to extract this subbibliography from the source database. . . . .                   | 4  |
| 3.1 | Distribution of publication type. . . . .  | 5  |
| 3.2 | Annual distribution of contributions. . . . .  | 5  |
| 3.3 | The most popular subjects. . . . .   | 5  |
| 3.4 | The most productive genetic algorithms with lasers authors. . . . .                              | 6  |
| 3.5 | The geographical distribution of the authors working on genetic algorithms with lasers . . . . . | 7  |
| B.1 | Indexed genetic algorithm special bibliographies available online . . . . .                      | 31 |

# Chapter 1

## Preface

“ Living organism are consummate problem solvers. They exhibit a versatility that puts the best computer programs to shame. ”

*John H. Holland, [1]*

The material of this bibliography has been extracted from the genetic algorithm bibliography [2], which when this report was compiled (August 27, 2008) contained 20566 items and which has been collected from several sources of genetic algorithm literature including Usenet newsgroup `comp.ai.genetic` and the bibliographies [3, 4, 5, 6]. The following index periodicals and databases have been used systematically

- A: *International Aerospace Abstracts*: Jan. 1995 – Sep. 1998
- ACM: *ACM Guide to Computing Literature*: 1979 – 1993/4
- BA: *Biological Abstracts*: July 1996 - Aug. 1998
- CA: *Computer Abstracts*: Jan. 1993 – Feb. 1995
- CCA: *Computer & Control Abstracts*: Jan. 1992 – Dec. 1999 (except May -95)
- ChA: *Chemical Abstracts*: Jan. 1997 - Dec. 2000
- CTI: *Current Technology Index* Jan./Feb. 1993 – Jan./Feb. 1994
- DAI: *Dissertation Abstracts International*: Vol. 53 No. 1 – Vol. 56 No. 10 (Apr. 1996)
- EEA: *Electrical & Electronics Abstracts*: Jan. 1991 – Apr. 1998
- EI A: *The Engineering Index Annual*: 1987 – 1992
- EI M: *The Engineering Index Monthly*: Jan. 1993 – Apr. 1998 (except May 1997)
- Esp@cenet *patents* – Apr. 2002
- IEEE: *IEEE and IEE Journals* – Fall 2002
- N: *Scientific and Technical Aerospace Reports*: Jan. 1993 - Dec. 1995 (except Oct. 1995)
- NASA *NASA ADS www bibliography database*: – Dec. 2002
- P: *Index to Scientific & Technical Proceedings*: Jan. 1986 – Dec 1999 (except Nov. 1994)
- PA: *Physics Abstracts*: Jan. 1997 – June 1999
- PubMed: *National Library of Medicine* Jan. 2000 – Oct. 2000
- SPIE Web *The International Society for Optical Engineering* – June 2002

## 1.1 Your contributions erroneous or missing?

The bibliography database is updated on a regular basis and certainly contains many errors and inconsistencies. The editor would be glad to hear from any reader who notices any errors, missing information, articles etc. In the future a more complete version of this bibliography will be prepared for the genetic algorithms with lasers research community and others who are interested in this rapidly growing area of genetic algorithms.

When submitting updates to the database, paper copies of already published contributions are preferred. Paper copies (or `ftp` ones) are needed mainly for indexing. We are also doing reviews of different aspects and applications of GAs where we need as complete as possible collection of GA papers. Please, do not forget to include complete bibliographical information: copy also proceedings volume title pages, journal table of contents pages, etc. Observe that there exists several versions of each subbibliography, therefore **the reference numbers are not unique and should not be used alone in communication**, use the **key** appearing as the last item of the reference entry instead.

Complete bibliographical information is really helpful for those who want to find your contribution in their libraries. If your paper was worth writing and publishing it is certainly worth to be referenced right in a bibliographical database read daily by GA researchers, both newcomers and established ones.

For further instructions and information see `ftp.uwasa.fi/cs/GAbib/README`.

### 1.1.1 How to cite this report?

You can use the BiB<sub>T</sub>E<sub>X</sub> file `GASUB.bib`, which is available in our ftp site `ftp.uwasa.fi` in directory `cs/report94-1` and contains records for GA subbibliographies for citing with L<sup>A</sup>T<sub>E</sub>X/Bib<sub>T</sub>E<sub>X</sub>.

## 1.2 How to get this report via Internet?

Versions of this bibliography are available via anonymous `ftp` or `www` from the following site:

| <i>media</i>     | <i>country</i> | <i>site</i>               | <i>directory</i>            | <i>file</i>                 |
|------------------|----------------|---------------------------|-----------------------------|-----------------------------|
| <code>ftp</code> | Finland        | <code>ftp.uwasa.fi</code> | <code>/cs/report94-1</code> | <code>gaLASERbib.pdf</code> |

The directory also contains some other indexed GA bibliographies shown in table B.1. In case you do not find a proper one please let us know: it may be easy to tailor a new one.

## 1.3 Acknowledgement

The editor wants to acknowledge all who have kindly supplied references, papers and other information on genetic algorithms with lasers literature. At least the following GA researchers have already kindly supplied their complete autobibliographies and/or proofread references to their papers: Dan Adler, Patrick Argos, Jarmo T. Alander, James E. Baker, Wolfgang Banzhaf, Helio J. C. Barbosa, Hans-Georg Beyer, Christian Bierwirth, Peter Bober Joachim Born, Ralf Bruns, I. L. Bukatova, Thomas Bäck, Chhandra Chakraborti, Nirupam Chakraborti, David E. Clark, Carlos A. Coello Coello, Yuval Davidor, Dipankar Dasgupta, Marco Dorigo, J. Wayland Eheart, Bogdan Filipić, Terence C. Fogarty, David B. Fogel, Toshio Fukuda, Hugo de Garis, Robert C. Glen, David E. Goldberg, Martina Gorges-Schleuter, Hitoshi Hemmi, Vasant Honavar, Jeffrey Horn, Aristides T. Hatjimihail, Heikki Hyötyniemi Mark J. Jakiela, Richard S. Judson, Bryant A. Julstrom, Charles L. Karr, Akihiko Konagaya, Aaron Konstam, John R. Koza, Kristinn Kristinsson, Malay K. Kundu, D. P. Kwok, Jouni Lampinen, Jorma Laurikkala, Gregory Levitin, Carlos B. Lucasius, Timo Mantere, Michael de la Maza, John R. McDonnell, J. J. Merelo, Laurence D. Merkle, Zbigniew Michalewics, Melanie Mitchell, David J. Nettleton, Volker Nissen, Ari Nissinen, Tatsuya Niwa, Tomasz Ostrowski, Kihong Park, Jakub Podgórski, Timo Poranen, Nicholas J. Radcliffe, Colin R. Reeves, Gordon Roberts, David Rogers, David Romero, Sam Sandqvist, Ivan Santibáñez-Koref, Marc Schoenauer, Markus Schwehm, Hans-Paul Schwefel, Michael T. Semertzidis, Davil L. Shealy, Moshe Sipper, William M. Spears, Donald S. Szarkowicz, El-Ghazali Talbi, Masahiro Tanaka, Leigh Tesfatsion,

Peter M. Todd, Marco Tomassini, Andrew L. Tuson, Kanji Ueda, Jari Vaario, Gilles Venturini, Hans-Michael Voigt, Roger L. Wainwright, D. Eric Walters, James F. Whidborne, Stefan Wiegand, Steward W. Wilson, Xin Yao, Xiaodong Yin, and Ljudmila A. Zinchenko.

The editor also wants to acknowledge Elizabeth Heap-Talvela for her kind proofreading of the manuscript of this bibliography and Tea Ollanketo and Sakari Kauvosaari for updating the database. Prof. Timo Salmi and the Computer Centre of University of Vaasa is acknowledged for providing and managing the online ftp site `ftp.uwasa.fi`, where these indexed bibliographies are located.

# Chapter 2

## Introduction

“Many scientist, possibly most scientist, just do science without thinking too much about it. They run experiments, make observations, show how certain data conflict with more general views, set out theories, and so on. Periodically, however, some of us—scientists included—step back and look at what is going on in science.”

*David L., Hull, [7]*

The table 2.1 gives the queries that have been used to extract this bibliography. The query system as well as the indexing tools used to compile this report from the BiBTeX-database [8] have been implemented by the author mainly as sets of simple `awk` and `gawk` programs [9, 10].

| <i>string</i>      | <i>field</i>        | <i>class</i> |
|--------------------|---------------------|--------------|
| <code>laser</code> | <code>ANNOTE</code> | Lasers       |
| <code>Laser</code> | <code>TITLE</code>  | Lasers       |

Table 2.1: Queries used to extract this subbibliography from the source database.

You might also find bibliographies [11] including all nanotechnology, [12] including all physics, and [13] including all optics references interesting.

# Chapter 3

## Statistical summaries

This chapter gives some general statistical summaries of genetic algorithms with lasers literature. More detailed indexes can be found in the next chapter.

References to each class (c.f table 2.1) are listed below:

- **Lasers** 56 references ([14]-[69])

Observe that each reference is included (by the computer) only to one of the above classes (see the queries for classification in table 2.1; the textual order in the query gives priority for classes).

### 3.1 Publication type

This bibliography contains published contributions including reports and patents. All unpublished manuscripts have been omitted unless accepted for publication. In addition theses, PhD, MSc etc., are also included whether or not published somewhere.

Table 3.1 gives the distribution of publication type of the whole bibliography. Observe that the number of journal articles may also include articles published or to be published in unknown forums.

| <i>type</i>         | <i>number of items</i> |
|---------------------|------------------------|
| section of a book   | 1                      |
| journal article     | 28                     |
| proceedings article | 24                     |
| report              | 2                      |
| MSc thesis          | 1                      |
| <i>total</i>        | 56                     |

Table 3.1: Distribution of publication type.

### 3.2 Annual distribution

Table 3.2 gives the number of genetic algorithms with lasers papers published annually. The annual distribution is also shown in fig. 3.1. The average annual growth of GA papers has been approximately 40 % during late 70's - early 90's.

| <i>year</i>  | <i>items</i> | <i>year</i> | <i>items</i> |
|--------------|--------------|-------------|--------------|
| 1991         | 1            | 1992        | 1            |
| 1993         | 2            | 1994        | 0            |
| 1995         | 0            | 1996        | 3            |
| 1997         | 6            | 1998        | 6            |
| 1999         | 0            | 2000        | 10           |
| 2001         | 9            | 2002        | 1            |
| 2003         | 2            | 2004        | 7            |
| 2005         | 4            | 2006        | 2            |
| 2007         | 1            | 2008        | 1            |
| <i>total</i> |              |             | 56           |

Table 3.2: Annual distribution of contributions.

### 3.3 Classification

Every bibliography item has been given at least one describing keyword or classification by the editor of this bibliography. Keywords occurring most are shown in table 3.3.

|               |     |
|---------------|-----|
| <i>Total</i>  | 55  |
| optics        | 33  |
| lasers        | 25  |
| manufacturing | 6   |
| hybrid        | 5   |
| engineering   | 5   |
| others        | 135 |

Table 3.3: The most popular subjects.

### 3.4 Authors

Table 3.4 gives the most productive authors.

|                         |     |
|-------------------------|-----|
| total number of authors | 162 |
| 19 authors              | 2   |
| 143 authors             | 1   |

Table 3.4: The most productive genetic algorithms with lasers authors.

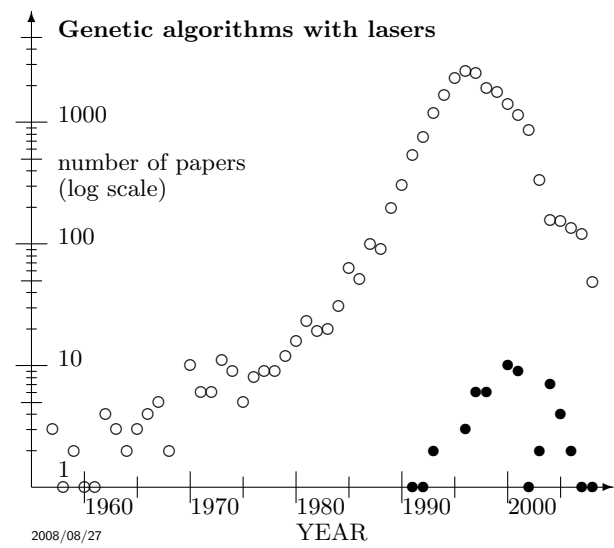


Figure 3.1: The number of papers applying **genetic algorithms with lasers** ( $\bullet$ ,  $N = 57$ ) and total GA papers ( $\circ$ ,  $N = 20566$ ). Observe that the last few years are most incomplete in the database.

### 3.5 Geographical distribution

Table 3.5 gives the geographical distribution of authors, when the country of the author was known. Over 80% of the references of the GA source database are classified by country.

| <small>2008/08/27</small><br><i>country</i> | <i>special</i> |          | <i>comparison</i> |              | <i>all</i> |          |
|---|----------------|----------|-------------------|--------------|------------|----------|
|   | <i>n</i>       | <i>%</i> | $\delta[\%]$      | $\Delta[\%]$ | <i>N</i>   | <i>%</i> |
| <i>Total</i>                                | 54             | 100.00   |                   |              | 19388      | 100.00   |
| United States                               | 23             | 42.59    | +14.81            | +53          | 5386       | 27.78    |
| China                                       | 10             | 18.52    | +13.71            | +285         | 933        | 4.81     |
| Japan                                       | 6              | 11.11    | -1.29             | -10          | 2404       | 12.40    |
| Finland                                     | 2              | 3.70     | -0.05             | -1           | 727        | 3.75     |
| Germany                                     | 2              | 3.70     | -3.28             | -47          | 1353       | 6.98     |
| Poland                                      | 2              | 3.70     | +2.81             | +316         | 173        | 0.89     |
| Singapore                                   | 2              | 3.70     | +2.88             | +351         | 159        | 0.82     |
| Switzerland                                 | 2              | 3.70     | +2.82             | +320         | 170        | 0.88     |
| Argentina                                   | 1              | 1.85     | +1.76             | +1956        | 18         | 0.09     |
| France                                      | 1              | 1.85     | -0.68             | -27          | 491        | 2.53     |
| Italy                                       | 1              | 1.85     | -1.03             | -36          | 559        | 2.88     |
| Lithuania                                   | 1              | 1.85     | +1.83             | +9150        | 4          | 0.02     |
| Mexico                                      | 1              | 1.85     | +1.28             | +225         | 110        | 0.57     |

Table 3.5: The geographical distribution of the authors working on genetic algorithms with lasers ( $n$ ) compared ( $\delta$  and  $\Delta$ ) to all authors in the field of GAs ( $N$ ). In the *comparison* column:  $\delta\% = \%special - \%all$  and  $\Delta = (1 - \frac{nN_{Total}}{Nn_{Total}}) \times 100\%$ .  $\Delta$  is the relative (%) deviation from the expected number of special papers. Observe that joint papers may have authors from several countries and that not all authors have been attributed to a country.

### 3.6 Conclusions and future

The editor believes that this bibliography contains references to most genetic algorithms with lasers contributions upto and including the year 1998 and the editor hopes that this bibliography could give some help to those who are working or planning to work in this rapidly growing area of genetic algorithms.



# Chapter 4

## Indexes

### 4.1 Books

The following list contains all items classified as books.

- none

### 4.2 Journal articles

The following list contains the references to every journal article included in this bibliography. The list is arranged in alphabetical order by the name of the journal.

ACES Journal, [15]  
Acta Physica Sinica, [14, 45]  
AIAA Journal, [46]  
AIAA Journal on Disc, [47]  
Applied Physics B Lasers and Optics, [20]  
Appl. Phys. B, Lasers Opt. (Germany), [48]  
Cailiao Yanjiu Xuebao, [55]  
Chemical Physics Letters, [32]  
Chinese Optics Letters, [34]  
IEEE Transactions on Electronics Packaging Manufacturing, [39]  
IEEE Transactions on Neural Networks, [51]  
International Journal of Machine Tools & Manufacture, [37]  
Journal of the Optical Society of America A: Optics, Image Science, and Vision, [27]  
Materials Science and Engineering C, [29]  
Optical and Quantum Electronics, [25, 53]  
Optical Express, [62]  
Optics and Laser Technology, [24]  
Optics Communications, [31]  
Optics Express, [41, 44]

Phys. Chem. News, [40]  
Physical Review Letters, [59]  
Review of Scientific Instruments, [33]  
Rev. Sci. Instrum. (USA), [57]  
Surface and Coatings Technology, [56]  
The International Journal of Advanced Manufacturing Technology, [23]  
total 28 articles in 25 series

### 4.3 Theses

The following two lists contain theses, first PhD theses and then Master's etc. theses, arranged in alphabetical order by the name of the school.

#### 4.3.1 PhD theses

- none

#### 4.3.2 Master's theses

This list includes also "Diplomarbeit", "Tech. Lic. Theses", etc.

Massachusetts Institute of Technology, [49]

### 4.4 Report series

The following list contains references to all papers published as technical reports. The list is arranged in alphabetical order by the name of the institute.

Institute of Naval Medicine, [61]  
University of Vaasa, [60]

total 2 reports in 2 institutes

## 4.5 Patents

The following list contains the names of the patents of genetic algorithms with lasers. The list is arranged in alphabetical order by the name of the patent.

- none

## 4.6 Authors

The following list contains all genetic algorithms with lasers authors and references to their known contributions.

|                        |          |                         |          |                          |          |
|------------------------|----------|-------------------------|----------|--------------------------|----------|
| Akiyama, Mamory,       | [68]     | Gerber, G.,             | [48]     | Liu, Yuan,               | [44]     |
| Alander, Jarmo T.,     | [60]     | Hafner, Christian,      | [15]     | Loose, Rich,             | [17]     |
| Ao, MingWu,            | [44]     | Hajima, Ryoichi,        | [68]     | Lorincz, A.,             | [52]     |
| Ausas, Roberto F.,     | [35]     | He, Sailing,            | [14, 25] | Maul, C.,                | [40]     |
| Aye, Tin M.,           | [17, 19] | He, S.,                 | [24]     | May, Gary S.,            | [38, 39] |
| Baumert, T.,           | [48]     | Higuchi, Tetsuya,       | [16]     | Ma, Y.,                  | [24]     |
| Beach, Nicole M.,      | [54]     | Higuchi, T.,            | [36]     | Mei, B.,                 | [20]     |
| Biles, William E.,     | [50]     | Holswade, Scott C.,     | [30]     | Mizoguchi, R.,           | [32, 33] |
| Bonetti, G.,           | [57]     | Huang, W. D.,           | [56]     | Moores, Mark D.,         | [54]     |
| Brixner, T.,           | [48]     | Huang, Weidong,         | [55]     | Moores, M. D.,           | [20]     |
| Bucksbaum, P. H.,      | [22]     | Hunziker, Stephan,      | [15]     | Moreno, Esteban,         | [15]     |
| Busgaclia, Gustavo C., | [35]     | Ikonen, Ilkka,          | [50]     | Mrozek, Adam,            | [63]     |
| Carcelli, M.,          | [57]     | Itatani, Taro,          | [16]     | Murakawa, Masahiro,      | [16]     |
| Carpenter, S. D.,      | [52]     | Itatani, T.,            | [36]     | Murakawa, M.,            | [36]     |
| Carroll, David L.,     | [46, 47] | Jai, Mohammed,          | [35]     | Noguchi, H.,             | [36]     |
| Chang, Zenghu,         | [41]     | Jaroszewicz, Leszek R., | [63]     | Nosato, H.,              | [36]     |
| Chan, Yuen-Chuen,      | [27]     | Jiang, WenHan,          | [44]     | Oakley, E. H. N.,        | [61]     |
| Cheng, C.,             | [24]     | Jian, Shuisheng,        | [62]     | Ohashi, Hirotada,        | [68]     |
| Cheng, Cheng,          | [14, 25] | Ji, Yang,               | [45]     | Onda, K.,                | [33]     |
| Cheng, J. Gary,        | [37]     | Judson, Richard S.,     | [59]     | Ostrowski, Tomasz,       | [69]     |
| Chen, Jun-Ben,         | [45]     | Kano, Satoru S.,        | [32, 33] | Oswald, Benedikt,        | [15]     |
| Chen, Zhanqing,        | [34]     | Kasai, Yuji,            | [16]     | Pan, Qingyue,            | [55]     |
| Corkum, Paul,          | [26]     | Kikkawa, Hideaki,       | [16]     | Pan, Q. Y.,              | [56]     |
| Cyran, Krzysztof A.,   | [63]     | Kim, Dai Hyun,          | [19]     | Parikh, Jo Ann,          | [42]     |
| Dargys, A.,            | [31]     | Kirihara, S.,           | [67]     | Pergantis, Charles G.,   | [19]     |
| Dickey, Fred M.,       | [30]     | Kostrzewski, Andrew A., | [19]     | Peter, J.,               | [52]     |
| Dowd, Philip,          | [27]     | Krause, Jeffrey L.,     | [58]     | Preble, Stefan,          | [66]     |
| Efimov, A.,            | [20]     | Krause, J. L.,          | [20]     | Rabitz, Herschel,        | [59]     |
| Efimov, Anatoly,       | [54]     | Krauss, Jeffrey L.,     | [54]     | Reitze, David H.,        | [54]     |
| Erni, Daniel,          | [15, 53] | Lam, Yee-Loy,           | [27]     | Reitze, D. H.,           | [20]     |
| Erwin, Daniel A.,      | [17]     | Légaré, François,       | [26]     | Robinson, Jacob T.,      | [65]     |
| Evans, Neal C.,        | [18, 21] | Li, B.,                 | [23]     | Roh, Hyoung Ho,          | [38]     |
| Fan, Qingwu,           | [43]     | Li, Jun,                | [43]     | Saito, H.,               | [67]     |
| Ferrari, F.,           | [57]     | Lin, C. D.,             | [41]     | Sanchez-Escobar, J.,     | [64]     |
| Fröhlich, Jürg,        | [15, 53] | Lipson, Hod,            | [65, 66] | Savant, Gajendra D.,     | [17, 19] |
| Fruehauf, Norbert,     | [17]     | Lipson, Michal,         | [65, 66] | Schafer, Kenneth J.,     | [58]     |
| Fuentes, Olac,         | [64]     | Liu, Ming,              | [34]     | Setia, Ronald,           | [38, 39] |
|                        |          |                         |          | Seyfried, V.,            | [48]     |
|                        |          |                         |          | Sharma, Nimmi C. Parikh, | [42]     |
|                        |          |                         |          | Shealy, David L.,        | [18, 21] |

|                      |          |                          |          |                   |          |
|----------------------|----------|--------------------------|----------|-------------------|----------|
| Shimizu, H.,         | [49]     | Tummala, Rao R.,         | [38]     | Yuan, Xiaocong,   | [27]     |
| Shiu, B. W.,         | [23]     | Vazquez-Montiel, Sergio, | [64]     | Yuan, XiaoCong,   | [28]     |
| Siders, C. W.,       | [20]     | Viappiani, C.,           | [57]     | Zhang, G. L.,     | [56]     |
| Smoot, Brayton E.,   | [17]     | Villeneuve, David,       | [26]     | Zhang, Guimin,    | [34]     |
| Song, Renguo,        | [55]     | Wada, A.,                | [32, 33] | Zhang, Jing-Juan, | [45]     |
| Song, R. G.,         | [29, 56] | Wang, Pu,                | [43]     | Zhang, Lianbao,   | [43]     |
| Spühler, Michael M., | [15, 53] | Weber, P. M.,            | [52]     | Zhang, Qizhi,     | [55]     |
| Sternieri, A.,       | [57]     | Wei, Huai,               | [62]     | Zhang, Q. Z.,     | [29]     |
| Strehle, M.,         | [48]     | Weinacht, T. C.,         | [22]     | Zhao, Mingjun M., | [17]     |
| Stroud, Phillip D.,  | [51]     | White, J. L.,            | [22]     | Zhao, Z. X.,      | [41]     |
| Sundaram, Venky,     | [38]     | Wiesmann, Dorothea,      | [15]     | Zhou, Guangya,    | [27, 28] |
| Szabo, G.,           | [52]     | Xu, Bing,                | [44]     | Zhou, Yaohe,      | [55]     |
| Szakacs, T.,         | [52]     | Yang, Ping,              | [44]     | Zhou, Y. H.,      | [56]     |
| Takeda, Nobukazu,    | [68]     | Yan, Haiqing,            | [34]     | Zou, Yunlu,       | [19]     |
| Tang, Chen,          | [34]     | Yao, De-Cheng,           | [45]     |                   |          |
| Tong, X. M.,         | [41]     | Yao, Y. Lawrence,        | [37]     |                   |          |
| Tong, Zhi,           | [62]     | Ye, Jianyu,              | [28]     |                   |          |

total 56 articles by 162 different authors

## 4.7 Subject index

All subject keywords of the papers given by the editor of this bibliography are shown next.

- |                       |              |                      |              |                        |  |
|-----------------------|--------------|----------------------|--------------|------------------------|--|
| adaptive optics,      | [44]         | geometrical optics   |              | surface melting,       | [55]   |
| aluminium,            | [29]         | illumination,        | [21]         | surface treatment,     | [29]   |
| amplifiers            |              | geometry,            | [67]         | laser                  |  |
| pulse,                | [20]         | holograms            |              | surface treatment,     | [35]   |
| applications          |              | computer generated,  | [63]         | lasers                 |  |
| military,             | [17]         | hybrid               |              | wave-front correction, | [36]   |
| bibliography          |              | local search,        | [27]         | machine learning,      | [51]   |
| lasers,               | [60]         | neural network,      | [55]         | magnets,               | [68]   |
| special,              | [60]         | neural networks,     | [56, 38, 39] | manufacture            |  |
| bin packing,          | [50]         | illumination         |              | sheet metal,           | [49]   |
| chemistry             |              | GRIN,                | [18]         | manufacturing          |  |
| physical,             | [40]         | laser,               | [18, 21]     | laser ablation,        | [38, 39]   |
| chromosome            |              | image processing     |              | laser processing,      | [43]   |
| 3D,                   | [50]         | 3D reconstruction,   | [67]         | sheet metal,           | [37]   |
| classification,       | [63]         | correlation,         | [34]         | surface treatment,     | [56]   |
| climate               |              | implementation       |              | welding,               | [23]   |
| aerosols,             | [42]         | CODE V,              | [21]         | measurements           |  |
| control               |              | laser forming,       | [49, 37]     | pH,                    | [57]   |
| feedback,             | [54]         | lasers,              | [59]         | neural networks,       | [43]   |
| laser,                | [51, 58]     | beam forming,        | [27]         | optical design optics  |  |
| lasers,               | [54]         | beam optics,         | [18]         | diffraction,           | [28]   |
| molecules,            | [22]         | beam shaping ,       | [28]         | optical fibers,        | [63]   |
| electronics           |              | bibliography,        | [60]         | optics                 |  |
| manufacturing,        | [38, 39]     | chemical,            | [46, 47]     | adaptive,              | [44]   |
| engineering           |              | control,             | [22, 44]     | design,                | [53, 15]   |
| materials,            | [56, 29, 43] | copper vapour,       | [25]         | diffraction,           | [27]   |
| mechanical,           | [23, 35]     | design,              | [53, 15]     | holograms,             | [63]   |
| evolution strategies, | [64]         | fiber,               | [62]         | illumination,          | [21]   |
| expert systems,       | [43]         | fluorecence,         | [40]         | interferometry,        | [64]   |
| fibers                |              | laser sintering,     | [50]         | laser,                 | [58]   |
| amplifier,            | [62]         | lidar,               | [42]         | lasers,                | [61, 45, 48, 52, 55, 57, 17, 20, 21, 24, 25, 26, 30, 31, 32, 33, 34, 36, 38, 39, 62, 16] |
| filters               |              | manufacturing,       | [56]         | photonic crystals,     | [65, 66]   |
| adaptive,             | [69]         | metrology,           | [19]         | ray tracing,           | [18]   |
| neural networks,      | [69]         | pulsed,              | [41]         | spectroscopy,          | [41]   |
| friction              |              | quenching,           | [43]         | photonic crystals      |  |
| lubrication,          | [35]         | semiconductor,       | [53]         | 2D,                    | [65, 66]   |
| GENESIS,              | [59]         | sheet metal forming, | [49, 37]     | physical chemistry,    | [59]   |
| genetic programming,  | [61]         | speckle,             | [34]         | physics,               | [68]   |
|                       |              |                      |              | molecular,             | [22]   |
|                       |              |                      |              | population size        |  |

|                    |      |                        |          |                  |      |
|--------------------|------|------------------------|----------|------------------|------|
| 50,                | [59] | Anderson localization, | [65]     | steel            |      |
| quantum mechanics  |      | review                 |          | corrosion,       | [56] |
| lasers,            | [54] | GA in optics,          | [15]     | stainless,       | [56] |
| rapid prototyping, | [50] | sensing                |          | welding          |      |
| reaction dynamics, | [40] | force,                 | [63]     | laser,           | [23] |
| remote sensing     |      | signal processing,     | [61, 69] | Wiggler magnets, | [68] |
| lidar,             | [42] | spectroscopy,          | [59]     |                  |      |
| resonators         |      | line shape,            | [40]     |                  |      |

## 4.8 Annual index

The following table gives references to the contributions by the year of publishing.

|       |  |       |                              |
|-------|--|-------|------------------------------|
| 1991, | [68]                                     | 2002, | [31]                         |
| 1992, | [59]                                     | 2003, | [32, 33]                     |
| 1993, | [61, 69]                                 | 2004, | [34, 35, 36, 37, 38, 39, 62] |
| 1996, | [45, 46, 47]                             | 2005, | [40, 65, 41, 66]             |
| 1997, | [48, 67, 49, 50, 51, 52]                 | 2006, | [42, 43]                     |
| 1998, | [53, 54, 55, 56, 57, 58]                 | 2007, | [44]                         |
| 2000, | [14, 15, 63, 16, 17, 18, 19, 20, 21, 22] | 2008, | [60]                         |
| 2001, | [23, 24, 25, 26, 27, 28, 29, 30, 64]     |       |                              |

## 4.9 Geographical index

The following table gives references to the contributions by country.

- Argentina: [35]
- China: [45, 55, 56, 25, 29, 34, 62, 43, 44, 23]
- Finland: [50, 60]
- Germany: [48, 40]
- Italy: [57]
- Japan: [67, 32, 33, 36, 16]
- Lithuania: [31]
- Mexico: [64]
- Poland: [69, 63]
- Singapore: [27, 28]
- Switzerland: [53, 15]
- United States: [59, 61, 46, 47, 49, 51, 52, 54, 58, 17, 18, 19, 20, 21, 22, 30, 37, 38, 39, 65, 41, 66, 42]
- Unknown country: [24, 26]

# Chapter 5

## Permuted title index

The words of the titles of the articles are shown in the next table arranged in alphabetical order. The most common words have been excluded. The key word is shown by a disk (●) in the title field with the exception that it is omitted when appearing as the first word of the title after shown keyword. The other abbreviation used to compress titles are shown in appendix A.

- [39] **ablation** Modeling and opt. of via formation in dielectrics by laser ● using neural networks and GAs
- [38] – Sensitivity analysis and opt. of excimer laser ● for microvia formation using neural network and GAs
- [51] **adaptation** Learning and ● in an airborne laser fire cntr.
- [20] **adaptive** Minimization of dispersion in an ultrafast chirped pulse amplifier using ● learning
- [54] ● cntr. of lasers and their interactions with matter
- [69] ● filters design using GA
- [42] **Aerosol** layer distrimination using laser radar and GAs
- [51] **airborne** Learning and adaptation in an ● laser fire cntr.
- [29] **aluminium alloy** Heat treatment opt. for 7175 ● by GA
- [20] **amplifier** Minimization of dispersion in an ultrafast chirped pulse ● using adaptive learning
- [19] **analysis** Noncontact laser metrology with real-time detection and high-speed processing for material ●
- [35] – Opt. tools in the ● of micro-textured lubricated devices
- [38] – Sensitivity ● and opt. of excimer laser ablation for microvia formation using neural network and GAs
- [57] – Study of proton transfer processes in solution using the laser induced pH-jump: a new experimental setup and an improved data ● based on GAs
- [40] **application** Line shapes and reaction dynamics: ● of GA
- [15] ● of evol. opt. alg. in computational optics
- [45] ● of GA to laser beam reshaping
- [41] **argon** Circularly-polarized laser-assisted photoionization spectra of ● for attosecond pulse measurements
- [55] **artificial** Opt. of laser surface melting technology for 1Cr18Ni9Ti stainless steel based on ● neural networks/GA
- [23] **assembly** Principle and simulation of fixture configuration design for sheet metal ● with laser welding. Part 2: Opt. configuration with the GA
- [41] **attosecond** Circularly-polarized laser-assisted photoionization spectra of argon for ● pulse measurements
- [36] **Automatic** wave-front correction of a femtosecond laser using GA
- [31] **band** Optimized intervalence ● transitions and pop. inversion patterns in k-space induced by femtosecond infrared pulses
- [45] **beam** Appl. of GA to laser ● reshaping
- [18] – Design of a gradient-index ● shaping syst. via a GAs
- [27] – Design of diffractive phase elements for ● shaping: hybrid appr.
- [28] – GA for opt. design of diffractive optical elements in laser ● shaping
- [30] – Laser ● shaping via conventional design software
- [60] **Bibliography** Indexed ● of GAs Lasers
- [46, 47] **Chemical** laser modeling with GAs
- [20] **chirped** Minimization of dispersion in an ultrafast ● pulse amplifier using adaptive learning
- [50] **chromosome** A GA with 3-dimensional ● for packing non-convex parts for selective laser sintering
- [41] **Circularly-polarized** laser-assisted photoionization spectra of argon for attosecond pulse measurements
- [63] **classification** Optical fiber and gen. optimised computer-generated hologram force detection and ●
- [24] **CO<sub>2</sub>** Opt. of a sealed-off ● laser resonator by utilizing a GA
- [65] **compact** Strong light confinement in novel ● pseudo-random structures designed via evol. alg.
- [62] **complex** Use of a GA to optimize multistage erbium-doped fiber-amplifier syst. with ● structures
- [15] **computational optics** Appl. of evol. opt. alg. in ●
- [63] **computer-generated** Optical fiber and gen. optimised ● hologram force detection and classification
- [23] **configuration** Principle and simulation of fixture ● design for sheet metal assembly with laser welding. Part 2: Opt. ● with the GA
- [65] **confinement** Strong light ● in novel compact pseudo-random structures designed via evol. alg.
- [54] **control** Adaptive ● of lasers and their interactions with matter
- [58] – Laser ● of stark wave packets
- [22] – Learning how to ● vibrations in multimode molecules
- [32] – Optical ● of excited states of -perylene crystal using optimized pulse shaping method
- [59] – Teaching lasers to ● molecules
- [44] **controlled** Intracavity transverse modes ● by a GA based on Zernike mode coefficients
- [51] **controller** Learning and adaptation in an airborne laser fire ●
- [30] **conventional** Laser beam shaping via ● design software
- [25] **copper vapor** Opt. design for a ● laser with a maximum output by using a GA
- [36] **correction** Automatic wave-front ● of a femtosecond laser using GA
- [56] **corrosion** The improvement of localized ● resistance in sensitized stainless steel by laser surface remelting
- [53] **coupled-cavity** Evol. opt. of non-periaodic ● semiconductor laser diodes
- [32] **crystal** Optical cntr. of excited states of -perylene ● using optimized pulse shaping method
- [69] **design** Adaptive filters ● using GA
- [28] – GA for opt. ● of diffractive optical elements in laser beam shaping
- [30] – Laser beam shaping via conventional ● software
- [18] ● of a gradient-index beam shaping syst. via a GAs

- [27] • of diffractive phase elements for beam shaping: hybrid appr.
- [25] – Opt. • for a copper vapor laser with a maximum output by using a GA
- [23] – Principle and simulation of fixture configuration • for sheet metal assembly with laser welding. Part 2: Opt. configuration with the GA
- [65] **designed** Strong light confinement in novel compact pseudo-random structures • via evol. alg.
- [66] **designing** Using evol. alg. for • photonic crystals
- [19] **detection** Noncontact laser metrology with real-time • and high-speed processing for material analysis
- [63] – Optical fiber and gen. optimised computer-generated hologram force • and classification
- [35] **devices** Opt. tools in the analysis of micro-textured lubricated •
- [17] **diagnostic** High-energy laser plasma • syst.
- [39] **dielectrics** Modeling and opt. of via formation in • by laser ablation using neural networks and GAs
- [27] **diffractive** Design of • phase elements for beam shaping: hybrid appr.
- [28] – GA for opt. design of • optical elements in laser beam shaping
- [34] **digital** The improved GA for • image correlation method
- [20] **dispersion** Minimization of • in an ultrafast chirped pulse amplifier using adaptive learning
- [42] **distrimination** Aerosol layer • using laser radar and GAs
- [52] **driven** Self-learning optical-syst. based on a GA • spatial light-modulator
- [27] **elements** Design of diffractive phase • for beam shaping: hybrid appr.
- [28] – GA for opt. design of diffractive optical • in laser beam shaping
- [62] **erbium-doped** Use of a GA to optimize multistage • fiber-amplifier syst. with complex structures
- [15] **evolutionary** Appl. of • opt. alg. in computational optics
- [48] – Femtosecond pulse shaping by an • alg. with feedback
- [53] • opt. of non-periaodic coupled-cavity semiconductor laser diodes
- [65] – Strong light confinement in novel compact pseudo-random structures designed via • alg.
- [66] – Using • alg. for designing photonic crystals
- [64] **evolution** Obtaining the phase of noisy synthetic interferogram using an • strategy
- [16] **evolvable** An • laser syst. for generating femtosecond pulses
- [38] **excimer** Sensitivity analysis and opt. of • laser ablation for microvia formation using neural network and GAs
- [32] **excited** Optical cntr. of • states of -perylene crystal using optimized pulse shaping method
- [57] **experimental** Study of proton transfer processes in solution using the laser induced pH-jump: a new • setup and an improved data analysis based on GAs
- [43] **expert system** The research of • of laser quenching based on gen. -neural network
- [48] **feedback** Femtosecond pulse shaping by an evol. alg. with •
- [16] **femtosecond** An evolvable laser syst. for generating • pulses
- [36] – Automatic wave-front correction of a • laser using GA
- [48] • pulse shaping by an evol. alg. with feedback
- [31] – Optimized intervalence band transitions and pop. inversion patterns in k-space induced by • infrared pulses
- [62] **fiber-amplifier** Use of a GA to optimize multistage erbium-doped • syst. with complex structures
- [63] **fiber** Optical • and gen. optimised computer-generated hologram force detection and classification
- [61] **filtering** Signal • and data processing for laser rheometry
- [69] **filters** Adaptive • design using GA
- [51] **fire** Learning and adaptation in an airborne laser • cntr.
- [23] **fixture** Principle and simulation of • configuration design for sheet metal assembly with laser welding. Part 2: Opt. configuration with the GA
- [63] **force** Optical fiber and gen. optimised computer-generated hologram • detection and classification
- [39] **formation** Modeling and opt. of via • in dielectrics by laser ablation using neural networks and GAs
- [38] – Sensitivity analysis and opt. of excimer laser ablation for microvia • using neural network and GAs
- [16] **generating** An evolvable laser syst. for • femtosecond pulses
- [63] **genetically** Optical fiber and • optimised computer-generated hologram force detection and classification
- [43] **genetic-neural network** The research of expert syst. of laser quenching based on •
- [18] **gradient-index** Design of a • beam shaping syst. via a GAs
- [49] **heat source** A heating process alg. for metal forming by a moving •
- [29] **Heat treatment** opt. for 7175 aluminium alloy by GA
- [49] **heating** A • process alg. for metal forming by a moving heat source
- [17] **High-energy** laser plasma diagnostic syst.
- [26] – Opt. of • short laser pulses using a GA
- [19] **high-speed** Noncontact laser metrology with real-time detection and • processing for material analysis
- [63] **hologram** Optical fiber and gen. optimised computer-generated • force detection and classification
- [27] **hybrid** Design of diffractive phase elements for beam shaping: • appr.
- [34] **image correlation** The improved GA for digital • method
- [67] **images** Obtaining polyhedral model by integration of multiview • via GAs
- [31] **induced** Optimized intervalence band transitions and pop. inversion patterns in k-space • by femtosecond infrared pulses
- [57] – Study of proton transfer processes in solution using the laser • pH-jump: a new experimental setup and an improved data analysis based on GAs
- [31] **infrared** Optimized intervalence band transitions and pop. inversion patterns in k-space induced by femtosecond • pulses
- [67] **integration** Obtaining polyhedral model by • of multiview images via GAs
- [54] **interactions** Adaptive cntr. of lasers and their • with matter
- [64] **interferogram** Obtaining the phase of noisy synthetic • using an ES
- [31] **intervalence** Optimized • band transitions and pop. inversion patterns in k-space induced by femtosecond infrared pulses
- [44] **Intracavity** transverse modes cntr. by a GA based on Zernike mode coefficients
- [31] **inversion** Optimized intervalence band transitions and pop. • patterns in k-space induced by femtosecond infrared pulses
- [31] **k-space** Optimized intervalence band transitions and pop. inversion patterns in • induced by femtosecond infrared pulses
- [41] **laser-assisted** Circularly-polarized • photoionization spectra of argon for attosecond pulse measurements
- [21] **laser** 5. Opt. -based techniques for • shaping optics
- [42] – Aerosol layer distrimination using • radar and GAs
- [50] – A GA with 3-dimensional chromosome for packing non-convex parts for selective • sintering
- [16] – An evolvable • syst. for generating femtosecond pulses
- [45] – Appl. of GA to • beam reshaping
- [36] – Automatic wave-front correction of a femtosecond • using GA
- [53] **laser diodes** Evol. opt. of non-periaodic coupled-cavity semiconductor •
- [37] **laser forming** Process synthesis of • by GA
- [43] **laser quenching** The research of expert syst. of • based on gen. -neural network
- [23] **laser welding** Principle and simulation of fixture configuration design for sheet metal assembly with • Part 2: Opt. configuration with the GA
- [46, 47] **laser** Chemical • modeling with GAs
- [28] – GA for opt. design of diffractive optical elements in • beam shaping
- [17] – High-energy • plasma diagnostic syst.
- [51] – Learning and adaptation in an airborne • fire cntr.
- [39] – Modeling and opt. of via formation in dielectrics by • ablation using neural networks and GAs
- [30] • beam shaping via conventional design software
- [58] • cntr. of stark wave packets

- [19] – Noncontact • metrology with real-time detection and high-speed processing for material analysis
- [25] – Opt. design for a copper vapor • with a maximum output by using a GA
- [24] – Opt. of a sealed-off  $CO_2$  • resonator by utilizing a GA
- [26] – Opt. of high-energy short • pulses using a GA
- [55] – Opt. of • surface melting technology for 1Cr18Ni9Ti stainless steel based on artificial neural networks/GA
- [38] – Sensitivity analysis and opt. of excimer • ablation for microvia formation using neural network and GAs
- [61] – Signal filtering and data processing for • rheometry
- [57] – Study of proton transfer processes in solution using the • induced pH-jump: a new experimental setup and an improved data analysis based on GAs
- [56] – The improvement of localized corrosion resistance in sensitized stainless steel by • surface remelting
- [54] **lasers** Adaptive cntr. of • and their interactions with matter
- [60] – Indexed Bibliography of GAs •
- [59] – Teaching • to cntr. molecules
- [42] **layer** Aerosol • distrimination using laser radar and GAs
- [20] **learning** Minimization of dispersion in an ultrafast chirped pulse amplifier using adaptive •
- [51] • and adaptation in an airborne laser fire cntr.
- [22] • how to cntr. vibrations in multimode molecules
- [65] **light** Strong • confinement in novel compact pseudo-random structures designed via evol. alg.
- [52] **light-modulator** Self-learning optical-syst. based on a GA driven spatial •
- [40] **Line shapes** and reaction dynamics: appl. of GA
- [56] **localized** The improvement of • corrosion resistance in sensitized stainless steel by laser surface remelting
- [35] **lubricated** Opt. tools in the analysis of micro-textured • devices
- [68] **magnets** Opt. of Wiggler • ordering using GAs
- [19] **material** Noncontact laser metrology with real-time detection and high-speed processing for • analysis
- [54] **matter** Adaptive cntr. of lasers and their interactions with •
- [25] **maximum** Opt. design for a copper vapor laser with a • output by using a GA
- [41] **measurements** Circularly-polarized laser-assisted photoionization spectra of argon for attosecond pulse •
- [55] **melting** Opt. of laser surface • technology for 1Cr18Ni9Ti stainless steel based on artificial neural networks/GA
- [49] **metal forming** A heating process alg. for • by a moving heat source
- [19] **metrology** Noncontact laser • with real-time detection and high-speed processing for material analysis
- [35] **micro-textured** Opt. tools in the analysis of • lubricated devices
- [38] **microvia** Sensitivity analysis and opt. of excimer laser ablation for • formation using neural network and GAs
- [20] **Minimization** of dispersion in an ultrafast chirped pulse amplifier using adaptive learning
- [46, 47] **modeling** Chemical laser • with GAs
- [39] • and opt. of via formation in dielectrics by laser ablation using neural networks and GAs
- [67] **model** Obtaining polyhedral • by integration of multi-view images via GAs
- [44] **modes** Intracavity transverse • cntr. by a GA based on Zernike mode coefficients
- [22] **molecules** Learning how to cntr. vibrations in multimode •
- [59] – Teaching lasers to cntr. •
- [49] **moving** A heating process alg. for metal forming by a • heat source
- [22] **multimode** Learning how to cntr. vibrations in • molecules
- [62] **multistage** Use of a GA to optimize • erbium-doped fiber-amplifier syst. with complex structures
- [67] **multiview** Obtaining polyhedral model by integration of • images via GAs
- [38] **neural network** Sensitivity analysis and opt. of excimer laser ablation for microvia formation using • and GAs
- [55] **neural networks/genetic** Opt. of laser surface melting technology for 1Cr18Ni9Ti stainless steel based on artificial • alg.
- [39] **neural networks** Modeling and opt. of via formation in dielectrics by laser ablation using • and GAs
- [64] **noisy** Obtaining the phase of • synthetic interferogram using an ES
- [19] **Noncontact** laser metrology with real-time detection and high-speed processing for material analysis
- [50] **non-convex** A GA with 3-dimensional chromosome for packing • parts for selective laser sintering
- [53] **non-periaodic** Evol. opt. of • coupled-cavity semiconductor laser diodes
- [67] **Obtaining** polyhedral model by integration of multi-view images via GAs
- [64] • the phase of noisy synthetic interferogram using an ES
- [28] **optical** GA for opt. design of diffractive • elements in laser beam shaping
- [32] • cntr. of excited states of -perylene crystal using optimized pulse shaping method
- [63] • fiber and gen. optimised computer-generated hologram force detection and classification
- [52] **optical-system** Self-learning • based on a GA driven spatial light-modulator
- [21] **optics** 5. Opt. -based techniques for laser shaping •
- [25] **Optimal** design for a copper vapor laser with a maximum output by using a GA
- [23] – Principle and simulation of fixture configuration design for sheet metal assembly with laser welding. Part 2: • configuration with the GA
- [63] **optimised** Optical fiber and gen. • computer-generated hologram force detection and classification
- [21] **Optimization-based** 5. • techniques for laser shaping optics
- [31] **Optimized** intervalence band transitions and pop. inversion patterns in k-space induced by femtosecond infrared pulses
- [32] – Optical cntr. of excited states of -perylene crystal using • pulse shaping method
- [33] – Thinning-out in • pulse shaping method using GA
- [62] **optimize** Use of a GA to • multistage erbium-doped fiber-amplifier syst. with complex structures
- [68] **ordering** Opt. of Wiggler magnets • using GAs
- [25] **output** Opt. design for a copper vapor laser with a maximum • by using a GA
- [58] **packets** Laser cntr. of stark wave •
- [50] **packing** A GA with 3-dimensional chromosome for • non-convex parts for selective laser sintering
- [31] **patterns** Optimized intervalence band transitions and pop. inversion • in k-space induced by femtosecond infrared pulses
- [32] **perylene** Optical cntr. of excited states of • crystal using optimized pulse shaping method
- [27] **phase** Design of diffractive • elements for beam shaping: hybrid appr.
- [64] – Obtaining the • of noisy synthetic interferogram using an ES
- [57] **pH-jump** Study of proton transfer processes in solution using the laser induced • a new experimental setup and an improved data analysis based on GAs
- [41] **photoionization** Circularly-polarized laser-assisted • spectra of argon for attosecond pulse measurements
- [66] **photonic crystals** Using evol. alg. for designing •
- [17] **plasma** High-energy laser • diagnostic syst.
- [67] **polyhedral** Obtaining • model by integration of multi-view images via GAs
- [31] **population** Optimized intervalence band transitions and • inversion patterns in k-space induced by femtosecond infrared pulses
- [57] **processes** Study of proton transfer • in solution using the laser induced pH-jump: a new experimental setup and an improved data analysis based on GAs
- [19] **processing** Noncontact laser metrology with real-time detection and high-speed • for material analysis
- [61] – Signal filtering and data • for laser rheometry
- [49] **process** A heating • alg. for metal forming by a moving heat source
- [37] • synthesis of laser forming by GA
- [57] **proton** Study of • transfer processes in solution using the laser induced pH-jump: a new experimental setup and an improved data analysis based on GAs
- [65] **pseudo-random** Strong light confinement in novel compact • structures designed via evol. alg.
- [41] **pulse** Circularly-polarized laser-assisted photoionization spectra of argon for attosecond • measurements
- [48] – Femtosecond • shaping by an evol. alg. with feedback

- [20] – Minimization of dispersion in an ultrafast chirped • amplifier using adaptive learning
- [32] – Optical cntr. of excited states of -perylene crystal using optimized • shaping method
- [33] – Thinning-out in optimized • shaping method using GA
- [16] **pulses** An evolvable laser syst. for generating femtosecond •
- [26] – Opt. of high-energy short laser • using a GA
- [31] – Optimized intervalence band transitions and pop. inversion patterns in k-space induced by femtosecond infrared •
- [42] **radar** Aerosol layer discrimination using laser • and GAs
- [40] **reaction dynamics** Line shapes and • appl. of GA
- [19] **real-time** Noncontact laser metrology with • detection and high-speed processing for material analysis
- [56] **remelting** The improvement of localized corrosion resistance in sensitized stainless steel by laser surface •
- [43] **research** The • of expert syst. of laser quenching based on gen. -neural network
- [45] **reshaping** Appl. of GA to laser beam •
- [56] **resistance** The improvement of localized corrosion • in sensitized stainless steel by laser surface remelting
- [24] **resonator** Opt. of a sealed-off  $CO_2$  laser • by utilizing a GA
- [61] **rheometry** Signal filtering and data processing for laser •
- [24] **sealed-off** Opt. of a •  $CO_2$  laser resonator by utilizing a GA
- [50] **selective** A GA with 3-dimensional chromosome for packing non-convex parts for • laser sintering
- [52] **Self-learning** optical-syst. based on a GA driven spatial light-modulator
- [53] **semiconductor** Evol. opt. of non-periodic coupled-cavity • laser diodes
- [38] **Sensitivity** analysis and opt. of excimer laser ablation for microvia formation using neural network and GAs
- [56] **sensitized** The improvement of localized corrosion resistance in • stainless steel by laser surface remelting
- [57] **setup** Study of proton transfer processes in solution using the laser induced pH-jump: a new experimental • and an improved data analysis based on GAs
- [21] **shaping** 5. Opt. -based techniques for laser • optics
- [18] – Design of a gradient-index beam • syst. via a GAs
- [27] – Design of diffractive phase elements for beam • hybrid appr.
- [48] – Femtosecond pulse • by an evol. alg. with feedback
- [28] – GA for opt. design of diffractive optical elements in laser beam •
- [30] – Laser beam • via conventional design software
- [32] – Optical cntr. of excited states of -perylene crystal using optimized pulse • method
- [33] – Thinning-out in optimized pulse • method using GA
- [23] **sheet metal** Principle and simulation of fixture configuration design for • assembly with laser welding. Part 2: Opt. configuration with the GA
- [26] **short** Opt. of high-energy • laser pulses using a GA
- [61] **Signal** filtering and data processing for laser rheometry
- [23] **simulation** Principle and • of fixture configuration design for sheet metal assembly with laser welding. Part 2: Opt. configuration with the GA
- [50] **sintering** A GA with 3-dimensional chromosome for packing non-convex parts for selective laser •
- [30] **software** Laser beam shaping via conventional design •
- [57] **solution** Study of proton transfer processes in • using the laser induced pH-jump: a new experimental setup and an improved data analysis based on GAs
- [52] **spatial** Self-learning optical-syst. based on a GA driven • light-modulator
- [41] **spectra** Circularly-polarized laser-assisted photoionization • of argon for attosecond pulse measurements
- [55] **stainless steel** Opt. of laser surface melting technology for 1Cr18Ni9Ti • based on artificial neural networks/GA
- [56] – The improvement of localized corrosion resistance in sensitized • by laser surface remelting
- [58] **stark** Laser cntr. of • wave packets
- [32] **states** Optical cntr. of excited • of -perylene crystal using optimized pulse shaping method
- [64] **strategy** Obtaining the phase of noisy synthetic interferogram using an evol. •
- [65] **Strong** light confinement in novel compact pseudo-random structures designed via evol. alg.
- [65] **structures** Strong light confinement in novel compact pseudo-random • designed via evol. alg.
- [62] – Use of a GA to optimize multistage erbium-doped fiber-amplifier syst. with complex •
- [55] **surface** Opt. of laser • melting technology for 1Cr18Ni9Ti stainless steel based on artificial neural networks/GA
- [56] – The improvement of localized corrosion resistance in sensitized stainless steel by laser • remelting
- [37] **synthesis** Process • of laser forming by GA
- [64] **synthetic** Obtaining the phase of noisy • interferogram using an ES
- [59] **Teaching** lasers to cntr. molecules
- [21] **techniques** 5. Opt. -based • for laser shaping optics
- [55] **technology** Opt. of laser surface melting • for 1Cr18Ni9Ti stainless steel based on artificial neural networks/GA
- [33] **Thinning-out** in optimized pulse shaping method using GA
- [35] **tools** Opt. • in the analysis of micro-textured lubricated devices
- [57] **transfer** Study of proton • processes in solution using the laser induced pH-jump: a new experimental setup and an improved data analysis based on GAs
- [31] **transitions** Optimized intervalence band • and pop. inversion patterns in k-space induced by femtosecond infrared pulses
- [44] **transverse** Intracavity • modes cntr. by a GA based on Zernike mode coefficients
- [20] **ultrafast** Minimization of dispersion in an • chirped pulse amplifier using adaptive learning
- [24] **utilizing** Opt. of a sealed-off  $CO_2$  laser resonator by • a GA
- [22] **vibrations** Learning how to cntr. • in multimode molecules
- [36] **wave-front** Automatic • correction of a femtosecond laser using GA
- [58] **wave** Laser cntr. of stark • packets
- [68] **Wiggler** Opt. of • magnets ordering using GAs
- [44] **Zernike mode coefficients** Intracavity transverse modes cntr. by a GA based on •

# Bibliography

- [1] John H. Holland. Genetic algorithms. *Scientific American*, 267(1):44–50, 1992. `ga:Holland92a`.
- [2] Jarmo T. Alander. *An indexed bibliography of genetic algorithms: Years 1957-1993*. Art of CAD Ltd., Vaasa (Finland), 1994. (over 3000 GA references).
- [3] David E. Goldberg, Kelsey Milman, and Christina Tidd. Genetic algorithms: A bibliography. IlliGAL Report 92008, University of Illinois at Urbana-Champaign, 1992. `ga:Goldberg92f`.
- [4] N. Saravanan and David B. Fogel. A bibliography of evolutionary computation & applications. Technical Report FAU-ME-93-100, Florida Atlantic University, Department of Mechanical Engineering, 1993. (available via anonymous ftp site `magenta.me.fau.edu` directory `/pub/ep-list/bib` file `EC-ref.ps.Z`) `ga:Fogel93c`.
- [5] Thomas Bäck. Genetic algorithms, evolutionary programming, and evolutionary strategies bibliographic database entries. (personal communication) `ga:Back93bib`, 1993.
- [6] Thomas Bäck, Frank Hoffmeister, and Hans-Paul Schwefel. Applications of evolutionary algorithms. Technical Report SYS-2/92, University of Dortmund, Department of Computer Science, 1992. `ga:Schwefel92d`.
- [7] David L. Hull. Uncle Sam wants you. *Science*, 284(5417):1131–1133, 14. May 1999.
- [8] Leslie Lamport. *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System. User's Guide and Reference manual*. Addison-Wesley Publishing Company, Reading, MA, 2 edition, 1994.
- [9] Alfred V. Aho, Brian W. Kernighan, and Peter J. Weinberger. *The AWK Programming Language*. Addison-Wesley Publishing Company, Reading, MA, 1988.
- [10] Diane Barlow Close, Arnold D. Robbins, Paul H. Rubin, and Richard Stallman. *The GAWK Manual*. Cambridge, MA, 0.15 edition, April 1993.
- [11] Jarmo T. Alander. Indexed bibliography of genetic algorithms in nanotechnology. Report 94-1-NANO, University of Vaasa, Department of Electrical Engineering and Automation, 2008. (`ftp.uwasa.fi/cs/report94-1/gaNANObib.pdf`) `gaNANObib`.
- [12] Jarmo T. Alander. Indexed bibliography of genetic algorithms in physical sciences. Report 94-1-PHYS, University of Vaasa, Department of Information Technology and Production Economics, 1995. (Previously included in [70]; available via anonymous ftp site `ftp.uwasa.fi` directory `cs/report94-1` file `gaPHYSbib.ps.Z`) `gaPHYSbib`.
- [13] Jarmo T. Alander. Indexed bibliography of genetic algorithms in optics and image processing. Report 94-1-OPTICS, University of Vaasa, Department of Information Technology and Production Economics, 1995. (available via anonymous ftp site `ftp.uwasa.fi` directory `cs/report94-1` file `gaOPTICSbib.ps.Z`) `gaOPTICSbib`.
- [14] Cheng Cheng and Sailing He. Optimization and elimination of ‘black center’ of a large-bore copper vapor laser. *Acta Physica Sinica*, 49(7):1267–1272, July 2000. (in Chinese) \* A01-15613 `ga00aChengCheng`.
- [15] Daniel Erni, Dorothea Wiesmann, Michael M. Spühler, Stephan Hunziker, Esteban Moreno, Benedikt Oswald, Jürg Fröhlich, and Christian Hafner. Application of evolutionary optimization algorithms in computational optics. *ACES Journal*, 15(2):43–60, ? 2000. `ga00aDanielErni`.
- [16] Masahiro Murakawa, Taro Itatani, Yuji Kasai, Hideaki Kikkawa, and Tetsuya Higuchi. An evolvable laser system for generating femtosecond pulses. pages 636–642, 2000. `ga00aMasahiroMurakawa`.
- [17] Mingjun M. Zhao, Tin M. Aye, Norbert Fruehauf, Gajendra D. Savant, Daniel A. Erwin, Brayton E. Smoot, and Rich Loose. High-energy laser plasma diagnostic system. In Todd D. Steiner and Paul H. Merritt, editors, *Laser Weapons Technology*, volume SPIE-4034, pages 90–99, ?, July 2000. The International Society for Optical Engineering. \* `www/SPIE Web` `ga00aMMZhao`.

- [18] Neal C. Evans and David L. Shealy. Design of a gradient-index beam shaping system via a genetic algorithms. In Fred M. Dickey and Scott C. Holswade, editors, *Laser Beam Shaping*, volume SPIE-4095, pages 26–39, San Diego, CA, 2. -4. August 2000. The International Society for Optical Engineering, Bellingham, WA. [ga00aNCEvans](#).
- [19] Yunlu Zou, Tin M. Aye, Gajendra D. Savant, Andrew A. Kostrzewski, Dai Hyun Kim, and Charles G. Pergantis. Noncontact laser metrology with real-time detection and high-speed processing for material analysis. In Gary W. Kamerman, Upendra N. Singh, Christian H. Werner, and Vasyl V. Molebny, editors, *Laser Radar Technology and Applications V*, volume SPIE-4035, pages 254–265, ?, September 2000. The International Society for Optical Engineering. \* [www/SPIE Web ga00aYZou](#).
- [20] A. Efimov, M. D. Moores, B. Mei, J. L. Krause, C. W. Siders, and D. H. Reitze. Minimization of dispersion in an ultrafast chirped pulse amplifier using adaptive learning. *Applied Physics B Lasers and Optics*, 70(7):S113–S141, ? 2000. \* [www /Springer ga00bAEfimov](#).
- [21] Neal C. Evans and David L. Shealy. *5. Optimization-based techniques for laser shaping optics*, pages 215–248. Marcel Dekker, Inc., New York, 2000. [ga00bNCEvans](#).
- [22] T. C. Weinacht, J. L. White, and P. H. Bucksbaum. Learning how to control vibrations in multimode molecules. In *Proceedings of the Quantum Electronics and Laser Science Conference (QELS 2000)*, volume 1, page 221, ?, 7.-12. May 2000. IEEE, Piscataway, NJ. [ga00bTCWeinacht](#).
- [23] B. Li and B. W. Shiu. Principle and simulation of fixture configuration design for sheet metal assembly with laser welding. part 2: Optimal configuration with the genetic algorithm. *The International Journal of Advanced Manufacturing Technology*, 18(4):276–284, 2001. [ga01aBLi](#).
- [24] C. Cheng, Y. Ma, and S. He. Optimization of a sealed-off CO<sub>2</sub> laser resonator by utilizing a genetic algorithm. *Optics and Laser Technology*, 33(8):601–604, November 2001. †NASA ADS [ga01aCCheng](#).
- [25] Cheng Cheng and Sailing He. Optimal design for a copper vapor laser with a maximum output by using a genetic algorithm. *Optical and Quantum Electronics*, 33(1):83–98, 1. January 2001. †EBSCO [ga01aChengCheng](#).
- [26] François Légaré, David Villeneuve, and Paul Corkum. Optimization of high-energy short laser pulses using a genetic algorithm. In ?, editor, *American Physical Society, DAMOP Meeting*, volume ?, page ?, London, Ontario (Canada), 16.-19. May 2001. ? †NASA ADS [ga01aFLegare](#).
- [27] Guangya Zhou, Xiacong Yuan, Philip Dowd, Yee-Loy Lam, and Yuen-Chuen Chan. Design of diffractive phase elements for beam shaping: hybrid approach. *Journal of the Optical Society of America A: Optics, Image Science, and Vision*, 18(4):791–800, April 2001. [ga01aGuangyaZhou](#).
- [28] Jianyu Ye, Xiaocong Yuan, and Guangya Zhou. Genetic algorithm for optimization design of diffractive optical elements in laser beam shaping. In Marek Osinski, Soo Jin Chua, and Akira Ishibashi, editors, *Design, Fabrication, and Characterization of Photonic Devices II*, volume SPIE-4594, pages 118–127, ?, October 2001. The International Society for Optical Engineering. \* [www/SPIE Web ga01aJYe](#).
- [29] R. G. Song and Q. Z. Zhang. Heat treatment optimization for 7175 aluminium alloy by genetic algorithm. *Materials Science and Engineering C*, 17(?):133–137, ? 2001. [ga01aRGSong](#).
- [30] Scott C. Holswade and Fred M. Dickey. Laser beam shaping via conventional design software. In Fred M. Dickey, Scott C. Holswade, and David L. Shealy, editors, *Laser Beam Shaping II*, volume SPIE-4443, pages 36–46, ?, October 2001. The International Society for Optical Engineering. \* [www/SPIE Web ga01aSCHolswade](#).
- [31] A. Dargys. Optimized intervalence band transitions and population inversion patterns in k-space induced by femtosecond infrared pulses. *Optics Communications*, 206(1-3):123–134, May 2002. †NASA ADS [ga02bADargys](#).
- [32] R. Mizoguchi, Satoru S. Kano, and A. Wada. Optical control of excited states of -perylene crystal using optimized pulse shaping method. *Chemical Physics Letters*, 378(?):319–324, September 2003. \* [homepage ga03aRMizoguchi](#).
- [33] R. Mizoguchi, K. Onda, Satoru S. Kano, and A. Wada. Thinning-out in optimized pulse shaping method using genetic algorithm. *Review of Scientific Instruments*, 74(?):2670–2674, May 2003. \* [homepage ga03bRMizoguchi](#).
- [34] Chen Tang, Ming Liu, Haiqing Yan, Guimin Zhang, and Zhanqing Chen. The improved genetic algorithm for digital image correlation method. *Chinese Optics Letters*, 2(10):574–577, ? 2004. \* [www /Google NASA ga04aChenTang](#).

- [35] Gustavo C. Busaglia, Roberto F. Ausas, and Mohammed Jai. Optimization tools in the analysis of micro-textured lubricated devices. In ?, editor, *Proceedings of Inverse Problems, Design and Optimization Symposium*, page ?, Rio de Janeiro (Brazil), ? 2004. ? [ga04aGCBusaglia](#).
- [36] H. Nosato, T. Itatani, M. Murakawa, T. Higuchi, and H. Noguchi. Automatic wave-front correction of a femtosecond laser using genetic algorithm. In *Proceedings of the 2004 IEEE International Conference on Systems, Man, and Cybernetics*, volume 4, pages 3675–3679, ?, 10.-13. October 2004. IEEE, Piscataway, NJ. \* [www /IEEE ga04aHNosato](#).
- [37] J. Gary Cheng and Y. Lawrence Yao. Process synthesis of laser forming by genetic algorithm. *International Journal of Machine Tools & Manufacture*, 44(?):1619–1628, ? 2004. [ga04aJGaryCheng](#).
- [38] Ronald Setia, Gary S. May, Venky Sundaram, Rao R. Tummala, and Hyoung Ho Roh. Sensitivity analysis and optimization of excimer laser ablation for microvia formation using neural network and genetic algorithms. In *Proceedings of the 2004 IEEE/CPMT/SEMI 29th International Symposium on Electronics Manufacturing Symposium*, pages 131–139, ?, 14.-15. July 2004. IEEE, Piscataway, NJ. [ga04aRSetia](#).
- [39] Ronald Setia and Gary S. May. Modeling and optimization of via formation in dielectrics by laser ablation using neural networks and genetic algorithms. *IEEE Transactions on Electronics Packaging Manufacturing*, 27(2):133–144, April 2004. [ga04bRSetia](#).
- [40] C. Maul. Line shapes and reaction dynamics: application of genetic algorithm. *Phys. Chem. News*, 21(?):73–78, January 2005. [ga05aCMaul](#).
- [41] Z. X. Zhao, Zenghu Chang, X. M. Tong, and C. D. Lin. Circularly-polarized laser-assisted photoionization spectra of argon for attosecond pulse measurements. *Optics Express*, 13(6):1966–1977, 21. March 2005. [ga05aZXZhao](#).
- [42] Jo Ann Parikh and Nimmi C. Parikh Sharma. Aerosol layer discrimination using laser radar and genetic algorithms. In *Proceedings of the 2006 IEEE International Conference on Geoscience and Remote Sensing Symposium IGARSS 2006*, volume ?, pages 3683–3686, ?, 31. July-4. August 2006. IEEE, Piscataway, NJ. [ga06aJAParikh](#).
- [43] Qingwu Fan, Pu Wang, Lianbao Zhang, and Jun Li. The research of expert system of laser quenching based on genetic-neural network. In *Proceedings of the 6th World Congress on Intelligent Control and Automation*, volume ?, pages 7969–7972, Dalian (China), 21-23. June 2006. IEEE, Piscataway, NJ. [ga06aQingwuFan](#).
- [44] Ping Yang, MingWu Ao, Yuan Liu, Bing Xu, and WenHan Jiang. Intracavity transverse modes controlled by a genetic algorithm based on Zernike mode coefficients. *Optics Express*, 15(25):17051–17058, 10. December 2007. [ga07aPingYang](#).
- [45] Jing-Juan Zhang, Yang Ji, De-Cheng Yao, and Jun-Ben Chen. Application of genetic algorithm to laser beam reshaping. *Acta Physica Sinica*, 45(5):789–795, 1996. †A96-42591 [ga96aJ-JZhang](#).
- [46] David L. Carroll. Chemical laser modeling with genetic algorithms. *AIAA Journal*, 34(2):338–346, 1996. [ga96bCarroll](#).
- [47] David L. Carroll. Chemical laser modeling with genetic algorithms. *AIAA Journal on Disc*, 1(1), 1996. (also as [46]) †A96-18965 [ga96cCarroll](#).
- [48] T. Baumert, T. Brixner, V. Seyfried, M. Strehle, and G. Gerber. Femtosecond pulse shaping by an evolutionary algorithm with feedback. *Appl. Phys. B, Lasers Opt. (Germany)*, B65(6):779–782, 1997. †PA42287/98 [ga97aBaumert](#).
- [49] H. Shimizu. A heating process algorithm for metal forming by a moving heat source. Master’s thesis, Massachusetts Institute of Technology, 1997. †[37] [ga97aHShimizu](#).
- [50] Ilkka Ikonen and William E. Biles. A genetic algorithm with 3-dimensional chromosome for packing non-convex parts for selective laser sintering. In Jarmo T. Alander, editor, *Proceedings of the Third Nordic Workshop on Genetic Algorithms and their Applications (3NWGA)*, pages 83–96, Helsinki (Finland), 18.-22. August 1997. Finnish Artificial Intelligence Society (FAIS). (available via anonymous ftp site [ftp.uwasa.fi](#) directory [cs/3NWGA](#) file [Ikonen.ps.Z](#)) [ga97aIkonen](#).
- [51] Phillip D. Stroud. Learning and adaptation in an airborne laser fire controller. *IEEE Transactions on Neural Networks*, 8(5):1078–1089, September 1997. [ga97aPDStroud](#).
- [52] S. D. Carpenter, P. M. Weber, J. Peter, G. Szabo, T. Szakacs, and A. Lorincz. Self-learning optical-system based on a genetic algorithm driven spatial light-modulator. In *Proceedings of the Second GR-I International Conference on New Laser Technologies and Applications*, volume SPIE-, pages 130–134, Olympia, Greece, 1.-4. June 1997. SPIE – International Society for Optical Engineering, Bellingham. †P82955 [ga97aSDCarpenter](#).

- [53] Daniel Erni, Michael M. Spühler, and Jürg Fröhlich. Evolutionary optimization of non-periodic coupled-cavity semiconductor laser diodes. *Optical and Quantum Electronics*, 30(5/6):287–303, May 1998. †[15] [ga98aDanielErni](#).
- [54] David H. Reitze, Anatoly Efimov, Nicole M. Beach, Mark D. Moores, and Jeffrey L. Krauss. Adaptive control of lasers and their interactions with matter. In *Proceedings of the Laser and Electro-Optics Society Annual Meeting, LEOS'98*, volume 1, page 58, ?, ? 1998. IEEE. [ga98aDHReitze](#).
- [55] Qingyue Pan, Renguo Song, Qizhi Zhang, Weidong Huang, and Yaohe Zhou. Optimization of laser surface melting technology for 1Cr18Ni9Ti stainless steel based on artificial neural networks/genetic algorithm. *Cailiao Yanjiu Xuebao*, 12(3):251–256, 1998. †ChA345711m/98 [ga98aQingyPan](#).
- [56] Q. Y. Pan, W. D. Huang, R. G. Song, Y. H. Zhou, and G. L. Zhang. The improvement of localized corrosion resistance in sensitized stainless steel by laser surface remelting. *Surface and Coatings Technology*, 102(?):245–255, ? 1998. [ga98aQYPan](#).
- [57] C. Viappiani, G. Bonetti, M. Carcelli, F. Ferrari, and A. Sternieri. Study of proton transfer processes in solution using the laser induced pH-jump: a new experimental setup and an improved data analysis based on genetic algorithms. *Rev. Sci. Instrum. (USA)*, 69(1):270–276, 1998. †PA38105/98 [ga98aViappian](#).
- [58] Jeffrey L. Krause and Kenneth J. Schafer. Laser control of stark wave packets. In ?, editor, *American Physical Society, Southeastern Section Meeting*, volume ?, page ?, Miami, FL, 13.-15. November 1998. American Physical Society. †NASA ADS [ga98cJLKrause](#).
- [59] Richard S. Judson and Herschel Rabitz. Teaching lasers to control molecules. *Physical Review Letters*, 68(10):1500–1503, 1992. [ga:Judson92c](#).
- [60] Jarmo T. Alander. Indexed bibliography of genetic algorithms lasers. Report 94-1-LASER, University of Vaasa, Department of Electrical Engineering and Automation, 2008. (available via anonymous ftp site [ftp.uwasa.fi](#) directory [cs/report94-1](#) file [gaLASERbib.pdf](#)) [gaLASERbib](#).
- [61] E. H. N. Oakley. Signal filtering and data processing for laser rheometry. Technical report ?, Institute of Naval Medicine, 1993. †Langdon/bib [ga:Oakley93a](#).
- [62] Huai Wei, Zhi Tong, and Shuisheng Jian. Use of a genetic algorithm to optimize multistage erbium-doped fiber-amplifier system with complex structures. *Optical Express*, 12(4):531–544, 23. February 2004. [ge04aHuaiWei](#).
- [63] Krzysztof A. Cyran, Leszek R. Jaroszewicz, and Adam Mrozek. Optical fiber and genetically optimised computer-generated hologram force detection and classification. In Wieslaw L. Wolinski and Zdzislaw Jankiewicz, editors, *Laser Technology VI: Applications*, volume SPIE-4238, pages 234–238, ?, November 2000. The International Society for Optical Engineering. \* [www/SPIE Web](#) [ga00aKCyrans](#).
- [64] Sergio Vazquez-Montiel, Olac Fuentes, and J. Sanchez-Escobar. Obtaining the phase of noisy synthetic interferogram using an evolution strategy. In Vera L. Brudny, Silvia A. Ledesma, and Mario C. Marconi, editors, *4th Iberoamerican Meeting on Optics and 7th Latin American Meeting on Optics, Lasers, and Their Applications*, volume SPIE-4419, pages 261–264, ?, August 2001. The International Society for Optical Engineering. \* [www/SPIE Web](#) [ga01aSVazquez-Montiel](#).
- [65] Jacob T. Robinson, Hod Lipson, and Michal Lipson. Strong light confinement in novel compact pseudo-random structures designed via evolutionary algorithms. In ?, editor, *Proceedings of the 2005 Quantum Electronics and Laser Science Conference (QELS)*, volume ?, pages 966–968, ?, 22.-27. May 2005. ? [ga05aJTRobinson](#).
- [66] Stefan Preble, Hod Lipson, and Michal Lipson. Using evolutionary algorithms for designing photonic crystals. In ?, editor, *Proceedings of the 2005 Conference on Lasers & Electro-Optics (CLEO)*, volume ?, pages 1485–1487, ?, May 2005. ? [ga05bSPreble](#).
- [67] H. Saito and S. Kirihara. Obtaining polyhedral model by integration of multiview images via genetic algorithms. In Kevin S. Harding and Donald J. Svetkoff, editors, *Three-Dimensional Imaging and Laser-Based Systems for Metrology and Inspection III*, volume SPIE-3204, pages ?–?, Pittsburgh, PA, 14. -15. October 1997. The International Society for Optical Engineering, Bellingham, WA. †prog. [ga97aHSaito](#).
- [68] Ryoichi Hajima, Nobukazu Takeda, Hirotada Ohashi, and Mamory Akiyama. Optimization of Wiggler magnets ordering using genetic algorithms. In *13th International Conference on Free Electron Laser*, volume 318 of *Nuclear Instruments & Methods in Physics Research Sector A-Accelerators, Spectrometers, Detectors and Associated Equipment*, pages 822–824, Santa Fe, NM, 25.-30. August 1991. [ga:Akiyama91a](#).
- [69] Tomasz Ostrowski. Adaptive filters design using genetic algorithm. In ?, editor, *Laser Technology IV*, volume SPIE-2202, pages 590–594, Szczecin-Swinoujscie (Poland), 26. -30. September 1993. The International Society for Optical Engineering, Bellingham, WA. \* A95-26130 [ga:Ostrowski93a](#).

- [70] Jarmo T. Alander. Indexed bibliography of genetic algorithms in chemistry and physics. Report 94-1-CHEMPHYS, University of Vaasa, Department of Information Technology and Production Economics, 1995. (Subdivided 2002 into [71, 12]; available via anonymous ftp site `ftp.uvasa.fi` directory `cs/report94-1` file `gaCHEMPHYSbib.ps.Z`) `gaCHEMPHYSbib`.
- [71] Jarmo T. Alander. Indexed bibliography of genetic algorithms in chemical sciences. Report 94-1-CHEM, University of Vaasa, Department of Engineering Sciences, 2002. (Previously included in [70]; available via anonymous ftp site `ftp.uvasa.fi` directory `cs/report94-1` file `gaCHEMbib.ps.Z`) `gaCHEMbib`.

## Notations

- †(ref) = the bibliography item does not belong to my collection of genetic papers.  
(ref) = citation source code. ACM = ACM Guide to Computing Literature, EEA = Electrical & Electronics Abstracts, BA = Biological Abstracts, CCA = Computers & Control Abstracts, CTI = Current Technology Index, EI = The Engineering Index (A = Annual, M = Monthly), DAI = Dissertation Abstracts International, P = Index to Scientific & Technical Proceedings, PA = Physics Abstracts, PubMed = National Library of Medicine, BackBib = Thomas Bäck's unpublished bibliography, Fogel/Bib = David Fogel's EA bibliography, etc  
\* = only abstract seen.  
? = data of this field is missing (BiBTeX-format).

The last field in each reference item in Teletype font is the BiBTeXkey of the corresponding reference.



# Appendix A

## Abbreviations

The following other abbreviations were used to compress the titles of articles in the permutation title index:

|        |  |       |   |
|--------|--|-------|---|
| AI     | = Artificial Intelligence                                | Int.  | = International   |
| Alg.   | = Algorithm(s)   | ImPr  | = Image Processing                                      |
| AL     | = Artificial Life  | JSS   | = Job Shop Scheduling                                   |
| ANN(s) | = Artificial Neural Net(work)(s)                         | ML    | = Machine Learning                                      |
| Appl.  | = Application(s), Applied                                | Nat.  | = Natural   |
| Appr.  | = Approach(es)   | NN(s) | = Neural Net(work)(s)                                   |
| Cntr.  | = Control, Controlled,<br>= Controlling, Controller(s)   | Opt.  | = Optimization, Optimal,<br>= Optimizer(s), Optimierung |
| Coll.  | = Colloquium   | OR    | = Operation(s) Research                                 |
| Comb.  | = Combinatorial  | Par.  | = Parallel, Parallelism                                 |
| Conf.  | = Conference   | Perf. | = Performance   |
| CS(s)  | = Classifier System(s)                                   | Pop.  | = Population(s), Populational(ly)                       |
| Distr. | = Distributed  | Proc. | = Proceedings   |
| Eng.   | = Engineering  | Prog. | = Programming, Program(s), Programmed                   |
| EP     | = Evolutionary Programming                               | Prob. | = Problem(s)  |
| ES     | = Evolutionsstrategie(n),<br>= Evolution(ary) strategies | QAP   | = Quadratic Assignment Problem                          |
| Evol.  | = Evolution, Evolutionary                                | Rep.  | = Representation(s), Representational(ly)               |
| ExS(s) | = Expert System(s)                                       | SA    | = Simulated Annealing                                   |
| FF(s)  | = Fitness Function(s)                                    | Sch.  | = Scheduling, Schedule(s)                               |
| GA(s)  | = Genetic Algorithm(s)                                   | Sel.  | = Selection, Selectionism                               |
| Gen.   | = Genetic(s), Genetical(ly)                              | Symp. | = Symposium   |
| GP     | = Genetic Programming                                    | Syst. | = System(s)   |
| Ident. | = Identification   | Tech. | = Technical, Technology                                 |
| Impl.  | = Implementation(s)                                      | TSP   | = Travel(l)ing Salesman Problem                         |

# Appendix B

## Bibliography entry formats

This documentation was prepared with L<sup>A</sup>T<sub>E</sub>X and reproduced from camera-ready copy supplied by the editor. The ones who are familiar with BIBTEX may have noticed that the references are printed using `abbrv` bibliography style and have no difficulties in interpreting the entries. For those not so familiar with BIBTEX are given the following formats of the most common entry types. The optional fields are enclosed by "[ ]" in the format description. Unknown fields are shown by "?". † after the entry means that neither the article nor the abstract of the article was available for reviewing and so the reference entry and/or its indexing may be more or less incomplete.

**Book:** Author(s), *Title*, Publisher, Publisher's address, year.

**Example**

John H. Holland. *Adaptation in Natural and Artificial Systems*. The University of Michigan Press, Ann Arbor, 1975.

**Journal article:** Author(s), Title, *Journal*, volume(number): first page – last page, [month,] year.

**Example**

David E. Goldberg. Computer-aided gas pipeline operation using genetic algorithms and rule learning. Part I: Genetic algorithms in pipeline optimization. *Engineering with Computers*, 3(?):35–45, 1987. †.

**Note:** the number of the journal unknown, the article has not been seen.

**Proceedings article:** Author(s), Title, editor(s) of the proceedings, *Title of Proceedings*, [volume,] pages, location of the conference, date of the conference, publisher of the proceedings, publisher's address.

**Example**

John R. Koza. Hierarchical genetic algorithms operating on populations of computer programs. In N. S. Sridharan, editor, *Eleventh International Joint Conference on Artificial Intelligence (IJCAI-89)*, pages 768–774, Detroit, MI, 20.-25. August 1989. Morgan Kaufmann, Palo Alto, CA. †.

**Technical report:** Author(s), Title, type and number, institute, year.

**Example**

Thomas Bäck, Frank Hoffmeister, and Hans-Paul Schwefel. Applications of evolutionary algorithms. Technical Report SYS-2/92, University of Dortmund, Department of Computer Science, 1992.

## Vaasa Genetic Algorithm Bibliography

### Search & Optimise

Main features:

- **Over 20,000 references to published papers**
- **by over 20,000 researchers.**
- **Available as over 70 special bibliographies online:**  
ftp://ftp.uwasa.fi/cs/report94-1/ga\*bib.pdf files.
- **Covers all sciences and engineering fields, from basic theory to applications.**
- **Several indexes and statistical summaries.**
- **See what problems evolution can solve for you!**

Global optimisation and search heuristics called genetic algorithm mimics evolution in nature using recombination and selection from a set of solution trials called population. One of the most prominent attractive features of genetic algorithms from the practical point of view of software techniques is their simplicity, which makes them easy to implement and tailor to solve practical search and optimisation problems.

In spite of the seemingly simple processing, the genetic algorithms are good at solving some problems that are known to be hard. The simplicity, generality, flexibility, parallelism, and the good problem solving capability have made genetic algorithm very popular among various disciplines desperately searching methods to solve difficult optimisation problems.

---

Observe that our server has also a selection of our papers on genetic algorithms and other computational topics. See our bibliographies or file `ftp.uwasa.fi/cs/README` for further details.

| <i>file</i>         | <i># refs</i> | <i>updated</i> | <i>contents</i>  |
|---------------------|---------------|----------------|--|
| ga90bib.ps.Z        |               |                | GA in 1990   |
| :                   | :             | :              | :  |
| ga02bib.ps.Z        | 557           |                | GA in 2002   |
| gaACOUSTICSbib.pdf  | 181           | 2008/03/19     | GA in acoustics ( <b>new: March 2008</b> )                           |
| gaAIbib.pdf         | 2402          | 2007/11/01     | GA in artificial intelligence  |
| gaAERObib.pdf       | 784           | 2004/06/01     | GA in aerospace  |
| gaAGRObib.pdf       | 102           | 2006/02/06     | GA in agriculture ( <b>new</b> )                                     |
| gaALIFEbib.pdf      | 171           | 2003/07/09     | GA in artificial life  |
| gaARTbib.pdf        | 142           | 2003/07/09     | GA in art and music  |
| gaAUSbib.pdf        | 659           | 2008/05/22     | GA in Australia and New Zealand                                      |
| gaBASICSbib.pdf     | 1040          | 2008/08/13     | Basics of GA   |
| gaBIObib.pdf        | 1358          | 2008/08/11     | GA in biosciences including medicine                                 |
| gaCADbib.pdf        | 1314          | 2008/08/18     | GA in Computer Aided Design  |
| gaCHEMbib.pdf       | 886           | 2004/09/20     | GA in chemical sciences ; previously in gaCHEMPHYSbib.ps.Z           |
| gaCHEMPHYSbib.ps.Z  | 2277          |                | GA in chemistry and physics; divided into gaCHEMbib.ps.Z and gaPHY   |
| gaCIVILbib.pdf      | 1007          | 2008/03/20     | GA in civil, structural, and mechanical engineering                  |
| gaCODEbib.pdf       | 377           | 2008/03/20     | GA coding  |
| gaCOEVObib.ps.Z     | 220           | 2006/03/27     | co- and differential evolution GA( <b>new</b> )                      |
| gaCONTROLbib.ps.Z   | 1766          | 2008/03/12     | GA in control and process engineering                                |
| gaCSbib.ps.Z        | 1453          | 2008/03/20     | GA in comp. sci. (incl. databases, /mining, software testing and GP) |
| gaEARLYbib.ps.Z     | 723           | 2008/03/12     | GA in yearly yeas (upto 1989) <b>new</b>                             |
| gaEAST-EURObib.ps.Z | 679           | 2003/07/09     | GA in the Eastern Europe   |
| gaECObib.pdf        | 1503          | 2008/03/20     | GA in economics and finance  |
| gaECOLbib.pdf       | 124           | 2008/08/21     | GA in ecology and biodiversity ( <b>new: 1.8.2008</b> )              |
| gaELMAbib.pdf       | 481           | 2008/03/20     | GA in electromagnetics   |
| gaESbib.pdf         | 464           | 2008/08/13     | Evolution strategies   |
| gaFAR-EASTbib.ps.Z  | 2066          | 2003/07/09     | GA in the Far East (excl. Japan)                                     |
| gaFEMbib.pdf        | 73            | 2008/08/18     | GA & FEM ( <b>new May 2008</b> )                                     |
| gaFRAbib.ps.Z       | 462           | 2003/07/09     | GA in France   |
| gaFTPbib.ps.Z       | 1353          | 2003/07/09     | GA papers available via web (ftp and www)                            |
| gaFUZZYbib.ps.Z     | 1453          | 2008/03/11     | GA and fuzzy logic   |
| gaGEObib.ps.Z       | 312           | 2005/06/30     | GA in geosciences  |
| gaGERbib.ps.Z       | 1586          | 2004/09/22     | GA in Germany, Austria, and Switzerland                              |
| gaGPbib.ps.Z        | 971           | 2008/08/13     | genetic programming  |
| gaIMPLEbib.ps.Z     | 1291          | 2003/07/09     | implementations of GA  |
| gaINDIAbib.ps.Z     | 276           | 2003/05/23     | GA in India  |
| gaINVERSEbib.ps.Z   | 244           | 2008/08/11     | GA in inverse problems ( <b>new: Aug 2007</b> )                      |
| gaISbib.ps.Z        | 81            | 2007/11/01     | immune systems   |
| gaJAPANbib.ps.Z     | 2404          | 2008/05/22     | GA in Japan  |
| gaLCSbib.ps.Z       | 211           | 2008/08/13     | Learning Classifier Systems  |
| gaLASERbib.ps.Z     | 57            | 2008/08/27     | GA and lasers ( <b>new: April 2008</b> )                             |
| gaLATINbib.ps.Z     | 649           | 2003/07/09     | GA in Latin America, Portugal & Spain                                |
| gaLOGISTICSbib.ps.Z | 630           | 2003/07/09     | GA in logistics (incl. TSP)  |
| gaMANUbib.ps.Z      |               |                | GA in manufacturing  |
| gaMATHbib.ps.Z      | 770           | 2003/07/09     | GA in mathematics  |
| gaMEDICINEbib.ps.Z  | 540           | 2008/07/17     | GA in medicine ( <b>new: Nov 2007</b> )                              |
| gaMEDITERbib.ps.Z   | 1810          | 2003/07/09     | GA in the Mediterranean  |
| gaMICRObib.ps.Z     | 83            | 2008/03/31     | GA in microscopy & microsystems ( <b>new: March 2008</b> )           |
| 111                 | 2005/01/25    |                | GA in military applications  |
| gaMLbib.ps.Z        | 897           | 2007/11/02     | GA in machine learning <b>new</b>                                    |
| gaMSEbib.ps.Z       | 490           | 2008/06/11     | GA in materials <b>new</b>   |
| gaNANObib.ps.Z      | 109           | 2008/04/07     | GA in nanotechnology <b>new</b>                                      |
| gaNIRbib.ps.Z       | 163           | 2007/08/23     | GA in NIRS (spectroscopy) <b>new</b>                                 |
| gaNNbib.ps.Z        | 1800          | 2008/03/12     | GA in neural networks  |
| gaNORDICbib.ps.Z    | 940           | 2008/08/21     | GA in Nordic countries   |
| gaOPTICSbib.ps.Z    | 1643          | 2008/07/28     | GA in optics and image processing                                    |
| gaOPTIMIbib.ps.Z    | 923           | 2003/07/09     | GA and optimization (only a few refs)                                |
| gaORBib.ps.Z        | 1662          | 2008/08/14     | GA in operations research  |

...table continues on the next page...

| <i>file</i>         | <i># refs</i> | <i>updated</i> | <i>contents</i>  |
|---------------------|---------------|----------------|--|
| gaPARAbib.ps.Z      | 766           | 2003/12/16     | Parallel and distributed GA                                |
| gaPARETObib.ps.Z    | 406           | 2003/07/09     | Pareto optimization  |
| gaPATENTbib.ps.Z    | 458           | 2003/07/09     | GA patents   |
| gaPATTERNbib.ps.Z   | 1528          | 2007/11/06     | GA in pattern recognition incl. LCS ( <b>new</b> )         |
| gaPHYSbib.ps.Z      | 2313          | 2008/04/07     | GA in physical sciences ; previously in gaCHEMPHYSbib.ps.Z |
| gaPIEZObib.ps.Z     | 51            | 2008/03/26     | GA & piezo ( <b>new: March 2008</b> )                      |
| gaPOWERbib.ps.Z     | 940           | 2008/08/21     | GA in power engineering                                    |
| gaPROTEINbib.ps.Z   | 491           | 2008/03/12     | GA in protein research                                     |
| gaQCbib.ps.Z        | 539           | 2008/03/11     | quantum computing  |
| gaREMOTebib.pdf     | 275           | 2008/08/11     | GA in remote sensing ( <b>new: 1.8.2008</b> )              |
| gaROBOTbib.pdf      | 745           | 2007/11/01     | GA in robotics   |
| gaSAbib.pdf         | 307           | 2003/07/09     | GA and simulated annealing                                 |
| gaSCHEDULINGbib.pdf | 785           | 2006/09/06     | GA in scheduling   |
| gaSELECTIONbib.ps.Z | 273           | 2007/09/20     | Selection in GAs ( <b>new</b> )                            |
| gaSIGNALbib.ps.Z    | 2230          | 2008/03/11     | GA in signal and image processing                          |
| gaSIMULAbib.ps.Z    | 939           | 2003/07/09     | GA in simulation   |
| gaTELEbib.ps.Z      | 784           | 2004/02/26     | GA in telecom  |
| gaTHEORYbib.ps.Z    | 2483          | 2008/08/13     | Theory and analysis of GA                                  |
| gaTHESEsbib.ps.Z    | 556           | 2008/03/12     | PhD etc theses   |
| gaUKbib.ps.Z        | 1998          | 2008/05/22     | GA in United Kingdom                                       |
| gaVLSIbib.ps.Z      | 806           | 2008/04/07     | GA in electronics, VLSI design and testing                 |

Table B.1: Indexed genetic algorithm special bibliographies available online in directory <ftp://ftp.uwasa.fi/cs/report94-1>. New updates also as .pdf files.