

# Technical University of Lodz Library in Poland

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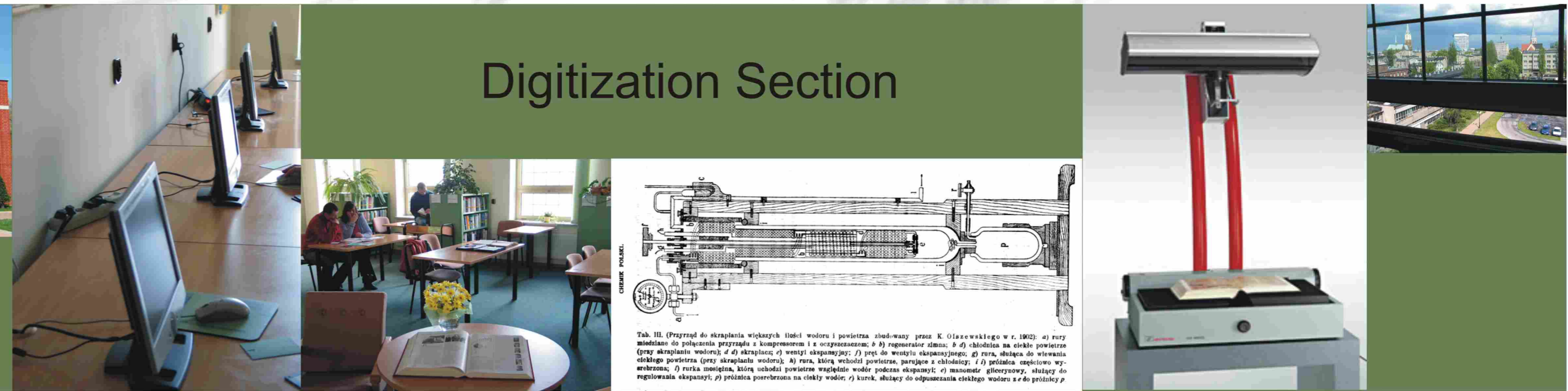
### Theses digitization: institutional repository start-up



Technical University of Lodz  
Facts and figures



Technical University of Lodz Library  
Facts and figures



Digitization Section

The Technical University of Lodz foundation act had been signed on 24th May in 1945. First the following free faculties were created:

- Faculty of Mechanical Engineering,
- Faculty of Electrical and Electronic Engineering,
- Faculty of Chemistry (see Fig.1. the comparison of faculty foundation date and the first PhD thesis produced).

During the first year of study it was 525 students at the university, 33 professors and 68 of other type of researchers.

Within the next years another faculties were founded. At present, TUL has 21.000 students on 9 faculties. The 29 of different programmes and 120 specializations, postgraduate and doctoral studies can be chosen from a wide university offer. The total number of the TUL workers is nearly 3000 (293 of professors included and 1515 of academic teachers). Almost 500 PhD students is registered on doctoral studies. Since 1945 till 2008 Library has gathered ca 3000 of printed copies of the Technical university of Lodz PhD theses:

- PhD theses of the present TUL researchers, who had PhD defences at TUL (see Fig. 2.),
- PhD theses of not TUL researchers, who had PhD defences at TUL,
- PhD theses of the present TUL researchers, who had PhD defences outside the TUL.

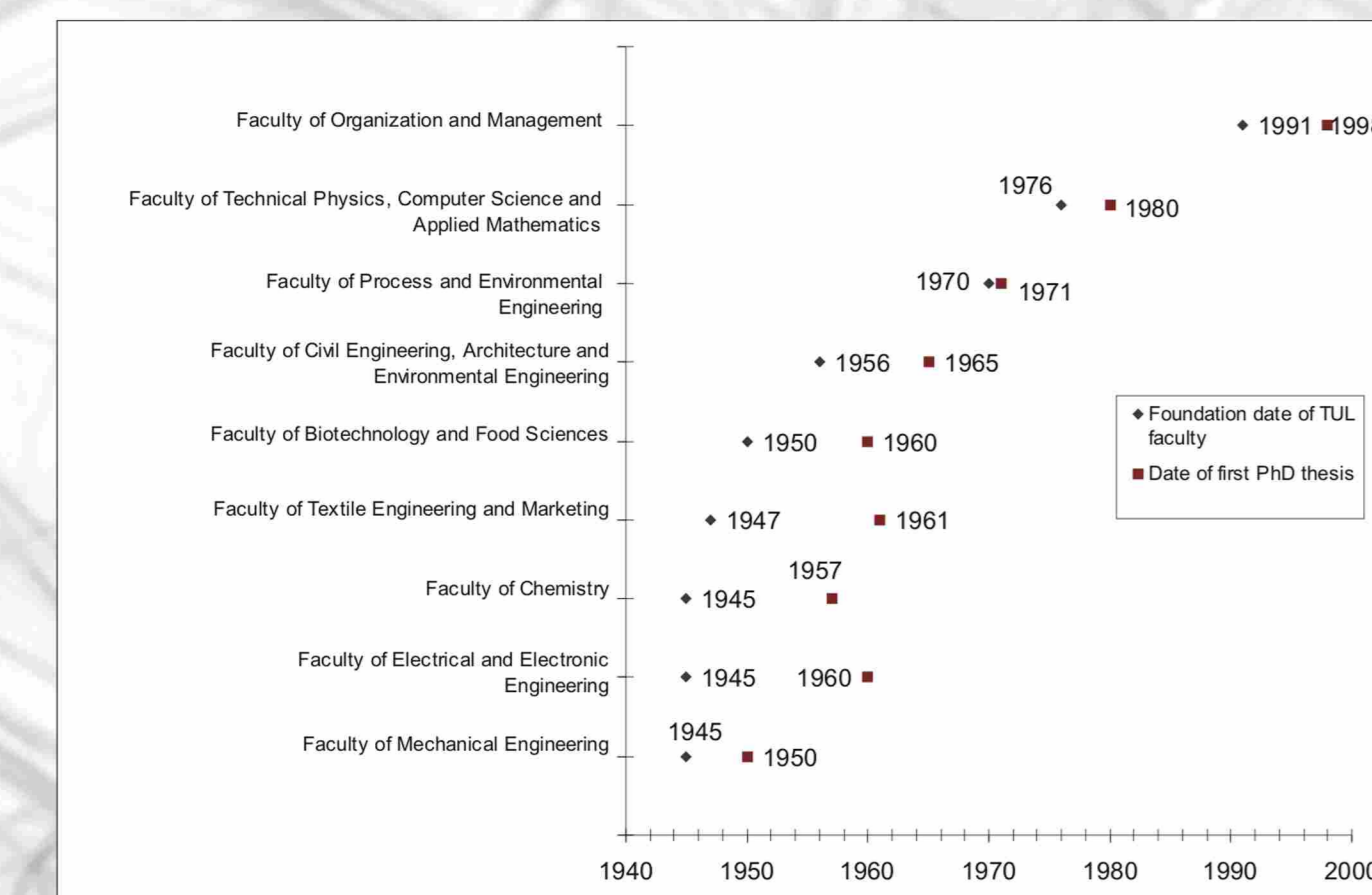


Fig. 1.

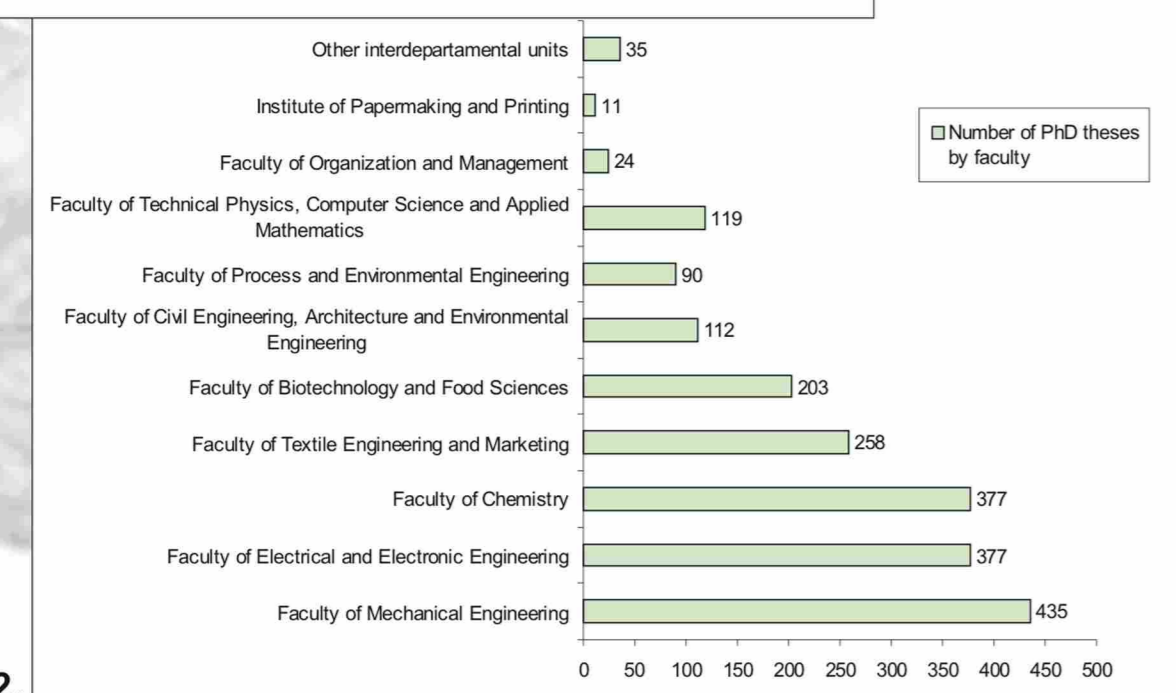


Fig. 2.

PhD theses total workflow in Poland can be found via Information Processing Centre databases. The service of information on conferred PhD degrees named People of Science has volume of about 121.000 records (degrees of PhD generally after 1990) [http://nauka-polska.pl/shtml/raporty/raporty\\_ludzkie.shtml](http://nauka-polska.pl/shtml/raporty/raporty_ludzkie.shtml). Information relevant for this database reaches the Centre through the Ministry of National Education and Sports. Institutions conferring academic degrees are obliged to complete and send to the Ministry a form of "Notification about conferring a PhD degree...".

Description of the PhD dissertation contains:

- personal data of persons who received a degree,
- title of thesis,
- abstracts in Polish and English,
- date of initiating the process and date of obtaining the academic degree,
- data concerning the institution in which the dissertation was conducted,
- information on the field of study related to the theme of thesis,
- information on professors conferring the degree and reviewing the thesis and other.

Both the Technical University of Lodz (TUL) and Library was founded in 1945: the university foundation act had been signed on 24th May and four months later the Library's.

The Library began to offer its services:

- with the collection of 930 volumes,
- and four people of staff.

At the end of 1995, the first Library homepage appeared on the Internet (<http://bg.p.lodz.pl>) with variety of library information and services.

The TUL Library, as a project leader, but in cooperation with other academic libraries from region, applied as a consortium for a grant to the Andrew W. Mellon Foundation in USA. The received funds allowed:

- to purchase integrated library system ILS Horizon,
- to implement computing devices,
- to cover the costs of full library automation which enabled expansion of offered services to the users as well as improved librarians' work.

Since many years, users can:

- order books remotely via online catalogue,
- renew due dates,
- check their user accounts,
- receive notifications of coming up due dates by email.

At the end of 2007, nearly 220 000 copies of books were catalogued in ILS Horizon (over 80% of Library's holdings) and total volumes of periodicals. In 1996, after many years of endeavours, the TUL purchased two buildings at 223 Wolczanska Street localization: first, old and historic, 5-storeyed, factory building formerly owned by the manufacturer Fryderyk Schweikert, dated from 1912; the latter 3-storeyed adjoining the previous one, the store for the Fagum-Stomil Company in the past. Adaptation works started in 1997. The Main Library (the central departments) began to provide its services in a modern and comfortable building in September 2002, after two-months break for removal.

In 2004, Blazej Feret (MSc Eng, Chartered Librarian) took charge of Library as a Chief Librarian in cooperation with two Deputy Chief Librarians: Elzbieta Rozniakowska (MSc, Chartered Librarian) and Elzbieta Skubala (MSc).

The TUL Library Collections of books, are organized in two collections:

- Scientific Books Collection,
  - Student Books Collection,
- which in total cover 271 500 items.

Other essential part of the TUL Library Collections is Periodicals Collection (over 131 000 items, 810 current titles).

The TUL Library Special Collection should be mentioned as well, these are:

- patent specifications (over 164 000 items),
- microforms (over 8 500 items),
- TUL dissertations (over 4 600 items),
- commercial catalogues with technical specifications (over 1500 items),
- audio-visual materials,
- CD-ROMs,
- reference collection (dictionaries, handbooks, other information resources).

Over many years, the TUL Library has been delivered access to the wide offer of electronic resources. At the end of 2007, the TUL Library had access to 44 different services (35 were next year continuation). In total, over 37 000 periodicals titles and 850 books is accessible.

Everybody, who hold valid library card, may have access to the most of electronic Library's resources, either they stay in university campus or at home. Some of databases can be accessible only on the university campus due to license agreement.

Other services such as:

- ILL,
  - Center of Patents Information,
  - TUL Research Staff Bibliography Database,
  - computer cluster rooms,
  - wireless hotspot and networked workstations,
- are just the beginning of a very long list of the wide Library offer.

(TUL Library, Information Guide, 2008, F.Podgorski, changed and translated by M.Rozniakowska-Klosinska)

The Digitization Section was evolved in 2004 within the structure of the Information Systems Department with digitization obligation of library materials scheduled for next years. In the beginning of 2009 the digitization project of PhD thesis with multi-oriented approach was introduced to the Library management.

PhD theses are publicly accessible in Library before defend without limitations (usually in the Reading Room) – after that phase 1 copy is placed obligatory in the Library Special Collection. Within last 10 years the exponential increase of lending on-site in the Reading Room of PhD theses in printed version proves the strong need of digitization and to make the theses accessible in electronic version. The project roadmap (project dates: March-December 2009), was proposed in the form:

1. Theses digitization process,
2. Batch or unit conversion of graphic files (format, quality correction),
3. OCR process (searchable content),
4. DSpace repository implementation (plus bibliographic data import),
5. Open access for TUL community.

Above 26.000 pages (see distributions on Fig. 3, 4) with graphs, images, BW photos, charts, figures, schemes, sketches, tables, mathematical and chemical formulae and programming codes dating back to 1950 were scanned. Only title page, contents, introduction, abstract, bibliography and conclusions were chosen for scanning process on Zeutschel 10000TT Omnican or Plustek OpticBook 3600.

Scanning specifications:

- Resolution of image 300 dpi, greyscale, compression: none,
- Tiff for archival purpose,
- Pdf for presentation.

Used corrections:

- Contrast, gamma correction,
- Sharpness,
- Skew,
- Blur etc.

Major problems in scanning:

- Missing pages,
- Duplicate pages,
- Misplaced pages,
- Unwanted junks,
- Quality of paper,
- Quality of fonts (see examples on Fig. 5).

Major problems in OCR process:

- Quality of paper,
- Quality of fonts (see examples on Fig. 5),
- Typeface from old typewriters,
- Sometimes not legible letters, difficult to distinguish: "a,c,e,o", etc.
- Necessity of neuron coaching application, sometimes on each document,
- Necessity of manual correction of OCR (see print screen on Fig.6.).

OCR process turned out to be a "tight tie" in the TUL Library PhD digitization project.

The repositories software packages platforms like ePrints, DSpace, Fedora were explored in terms of their usability. The DSpace software was chosen, installed and configured successfully on Linux platform. DSpace features like multi-format-support, very customizable interface, authorization, reviewing processes, OAI-PMH compliance etc. were convincing enough (see Fig. 7.).

As metadata scheme, the Dublin Core Elements were proposed. It is widely applied scheme, flexible with repeatable elements (attributes), with which we are acquainted thoroughly as digital library operators.

We still need to change our researchers and university authorities mentality – helping them in "spreading their scientific peacock tail" – show them benefits from the ETD database creation. In addition, the balance between intellectual property rights and open access to research results should be found in order to innovative and high quality science development.

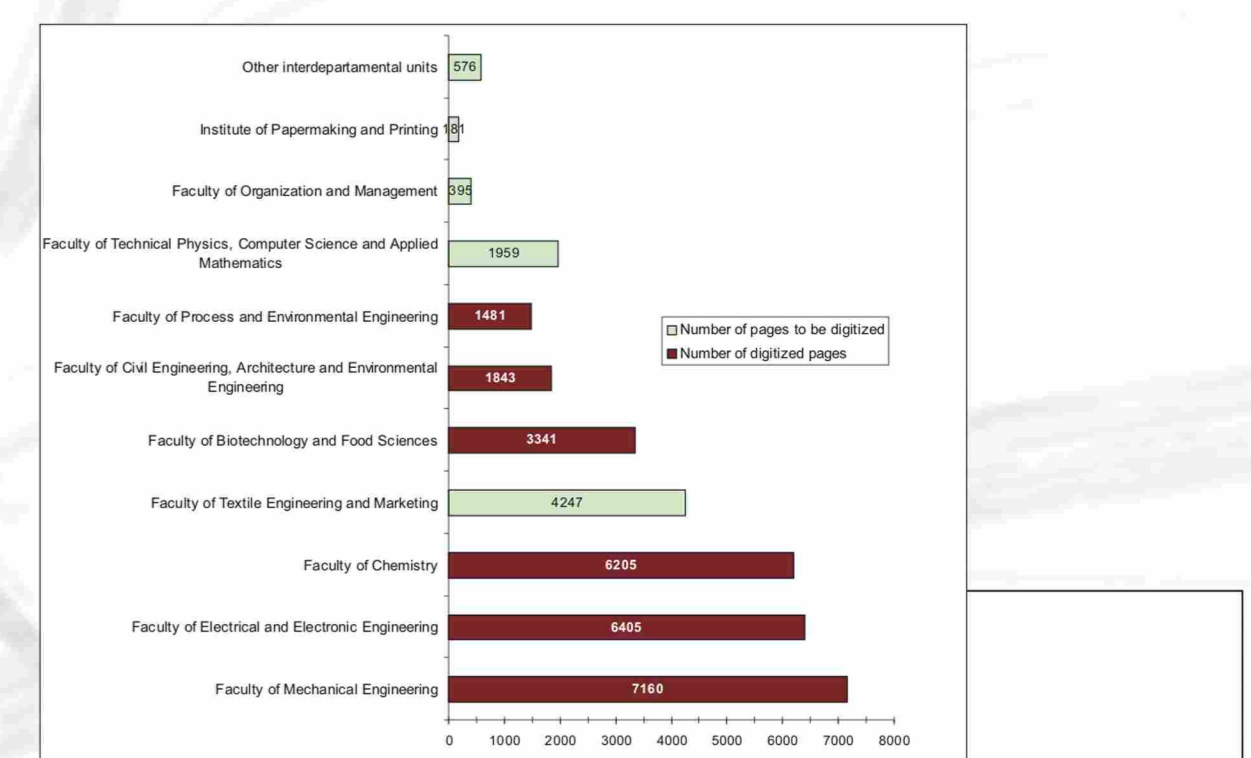


Fig. 3.

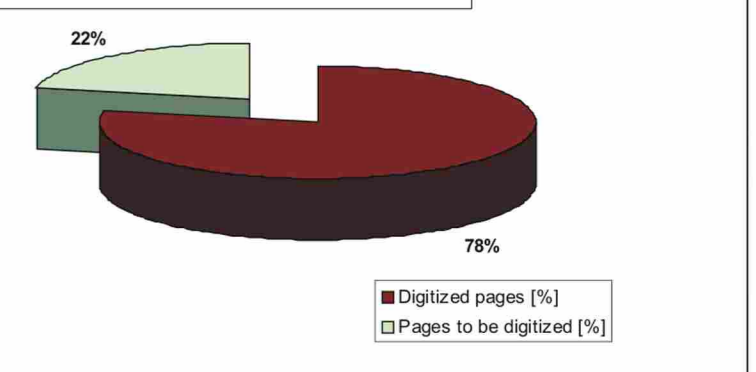


Fig. 4.

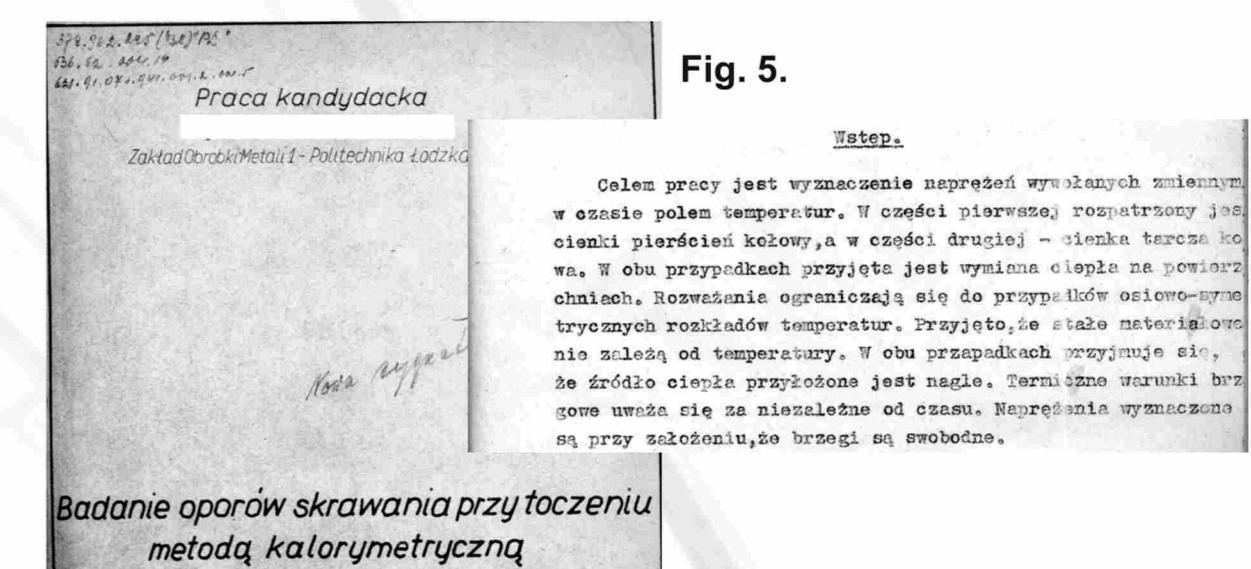


Fig. 5.

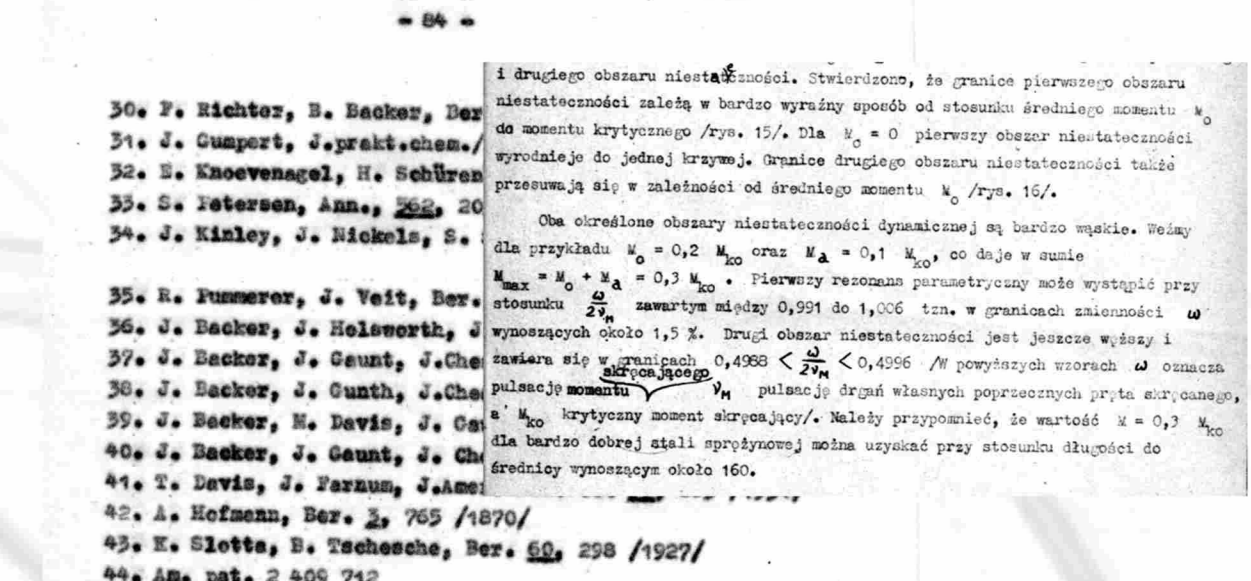


Fig. 6.

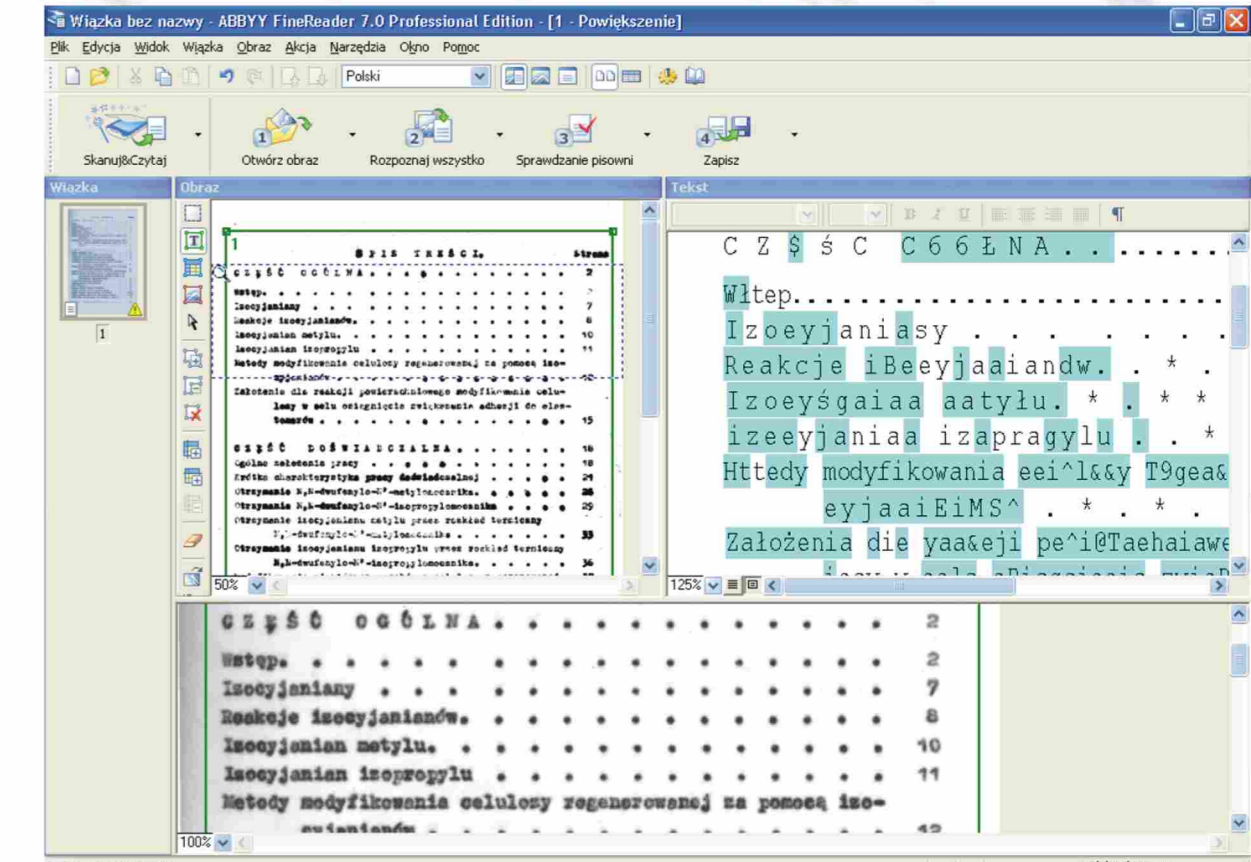


Fig. 7.