PS_View

PS_View

a new edition of a known program

Piotr Strzelczyk, Piotr Pianowski

PS_View

A viewer for PS and PDF documents based on a Ghostscript library

Authors:

Piotr Strzelczyk and Piotr Pianowski
BOP s.c., Gdańsk, Poland

History:

- 1994 premiere at EuroTEX (in Sobieszewo)
- 1998 version 2.0 at VI BachoTEX
- 2004 version 3.99 at XII BachoTEX
- 2008 version 5.16 at XVI BachoTEX

PostScript

Page description language

- device independent
- vector objects, fonts and bitmaps
- advanced prepress features

First and most significant product of Adobe

History:

- 1985 premiere
- 1991 Level 2 (CMYK, filters, ...)
- 1997 Level 3 (CID fonts, color spaces, ...)

PostScript becomes common standard in printing and Open Source systems

PDF (Portable Document Format)

File format for documents presentation and exchange

- well-defined, portable layout, good compression
- hypertext and interactive elements
- younger relative of PostScript

Next great achievement of Adobe corporation

History:

- 1993 premiere
- 1999 Acrobat Reader for Linux
- 2007 PDF 1.7 standard

PDF is an unquestionable standard for documents transmition and archiving

Ghostscript

Interpreter of the PostScript
(and PDF) language

- Open Source
- accordance with standards
- excellent functionality and efficiency

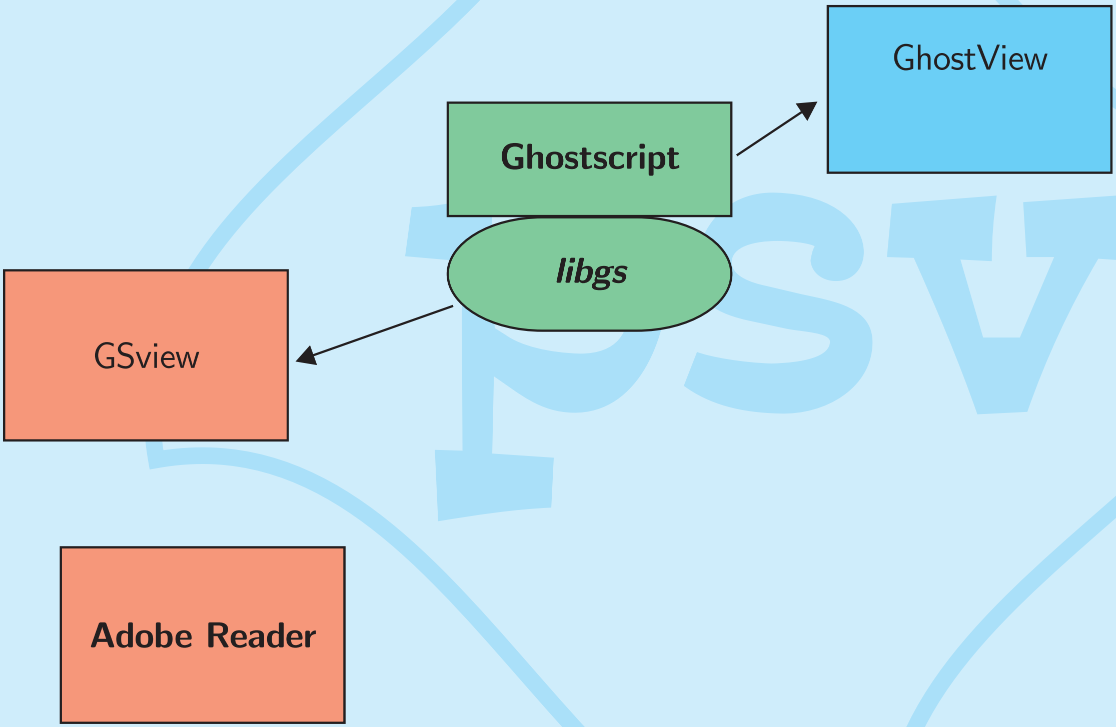
Authors: L Peter Deutsch (Aladdin Software)
Artifex Inc. (Ralph Levien, Ralph Giles, Alex Cherepanov, . . .)

History:

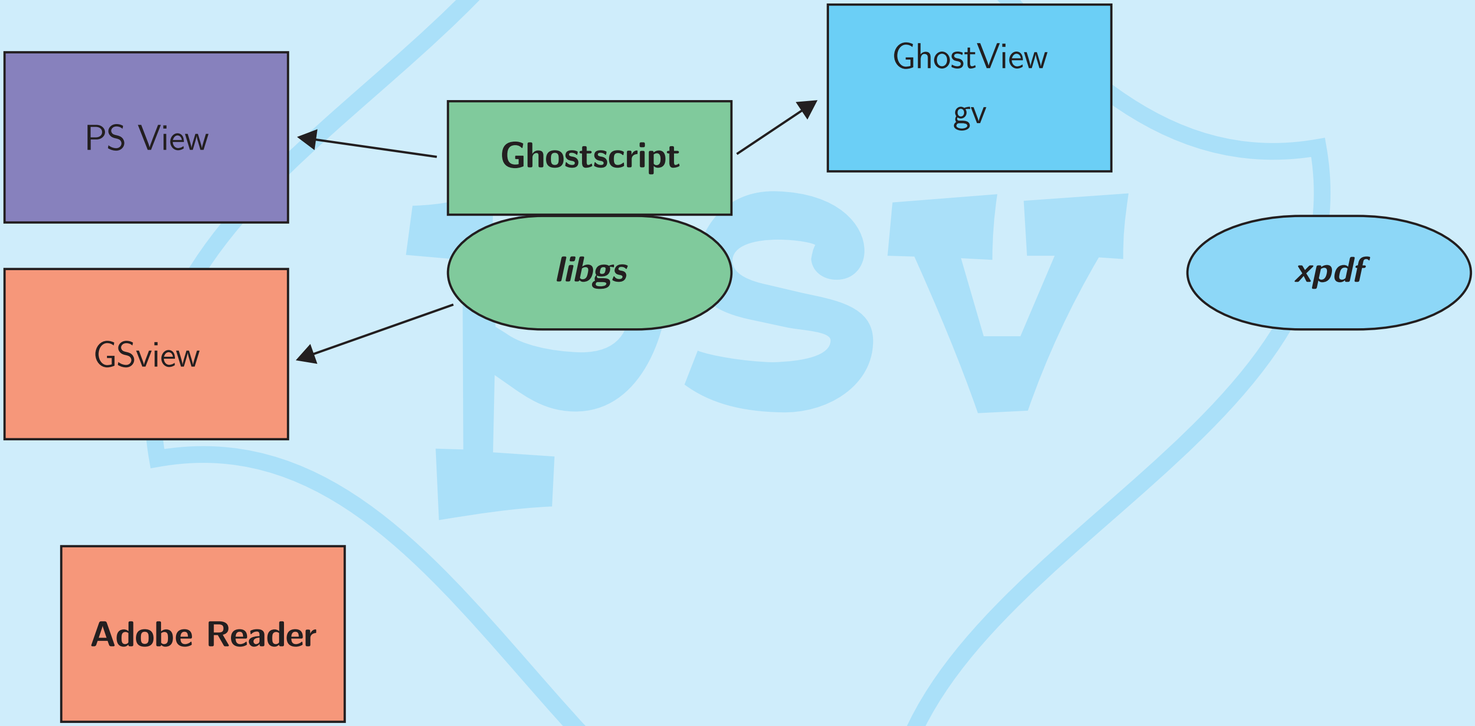
- 1988 version 1.0
- 1995 version 3.3 (PDF)
- now – version 8.62

Ghostscript is one of the best PostScript interpreters
– commonly used (although often behind the scenes)

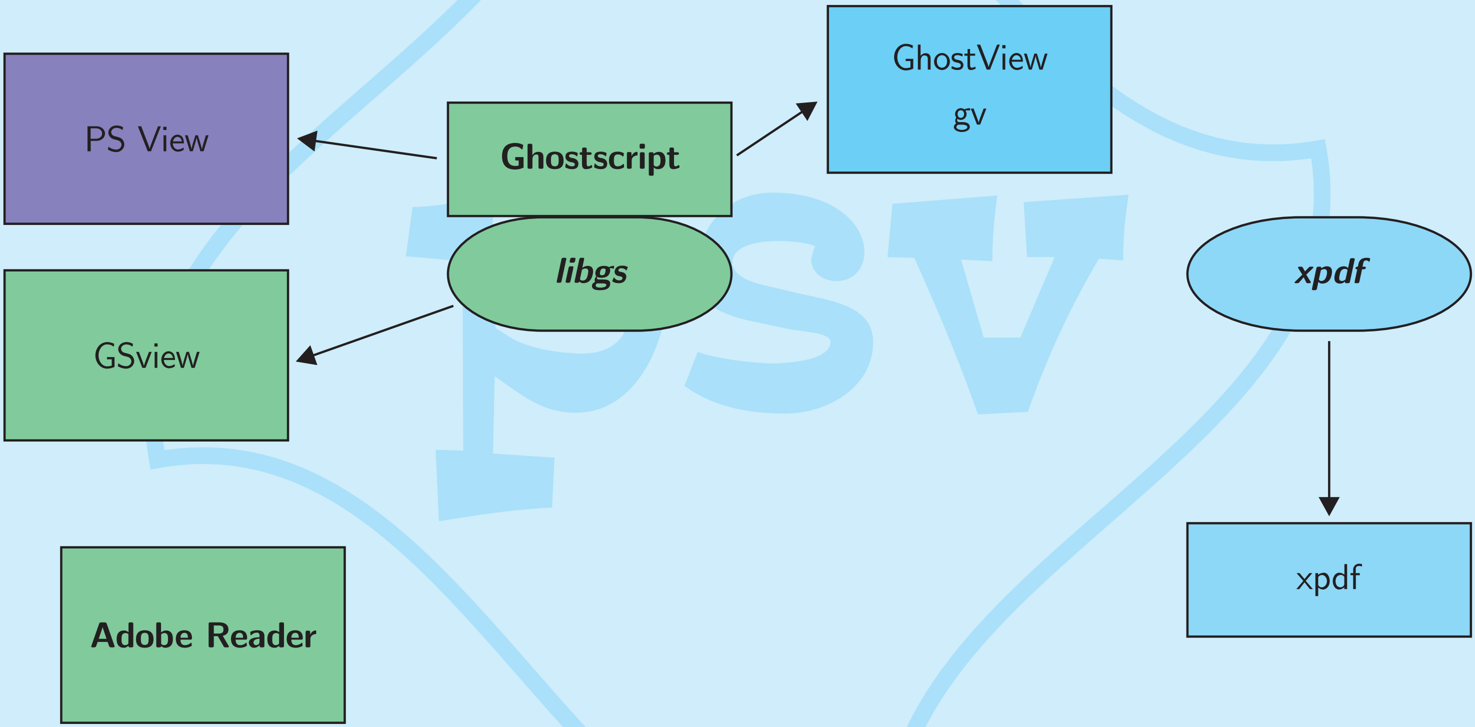
PS and PDF document viewers



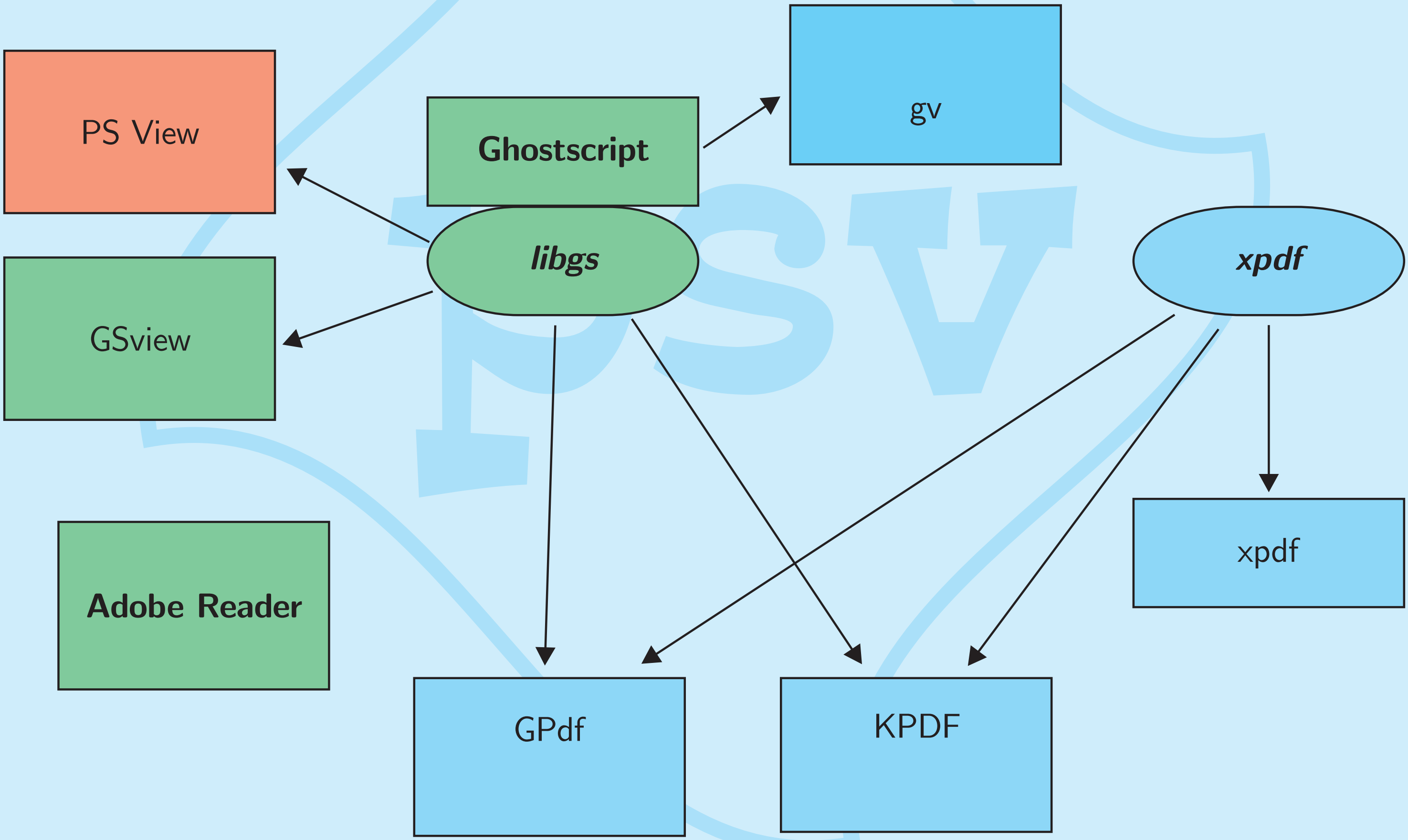
PS and PDF document viewers



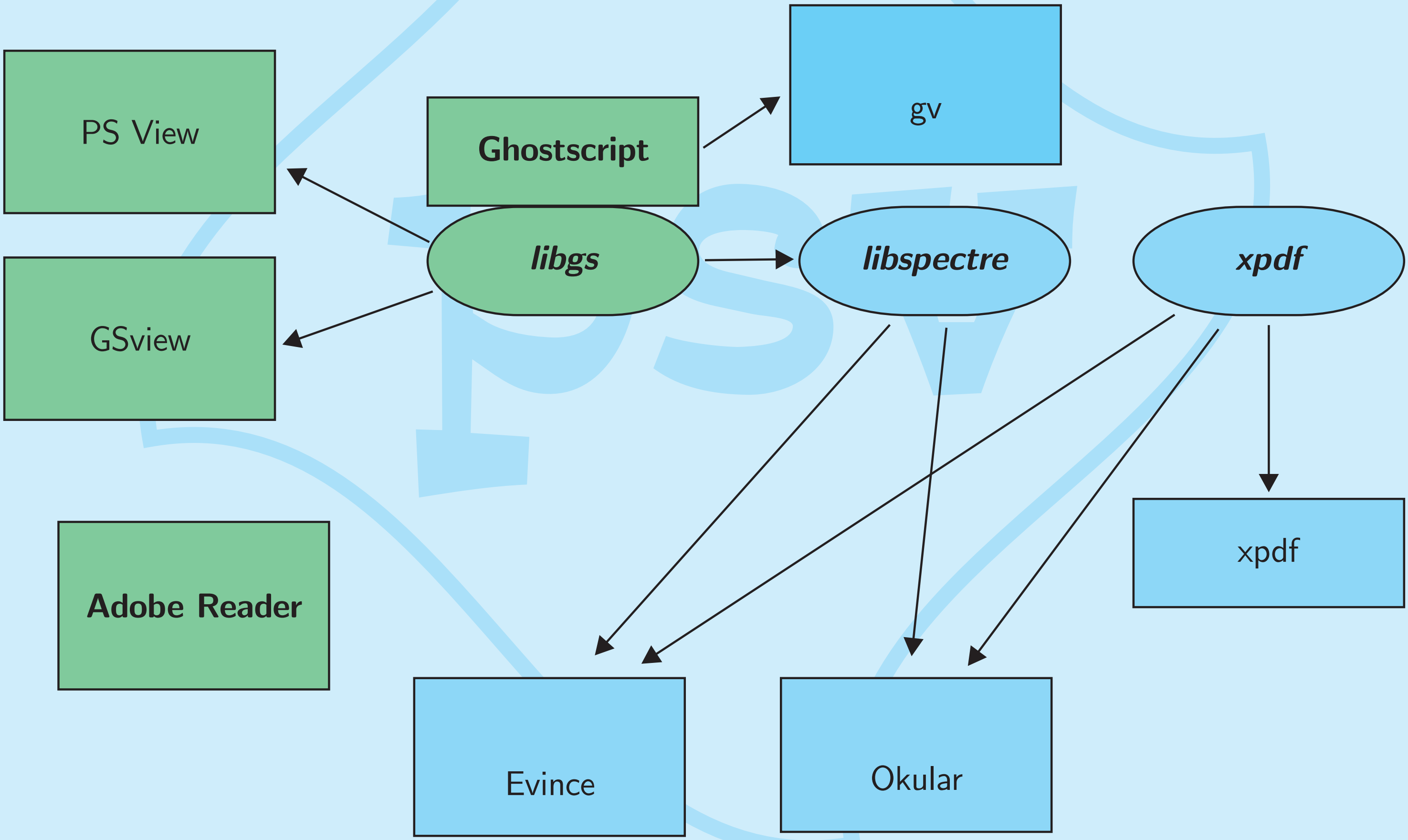
PS and PDF document viewers



PS and PDF document viewers



PS and PDF document viewers



PS_View

viewer of PostScript
and PDF documents

PS_View

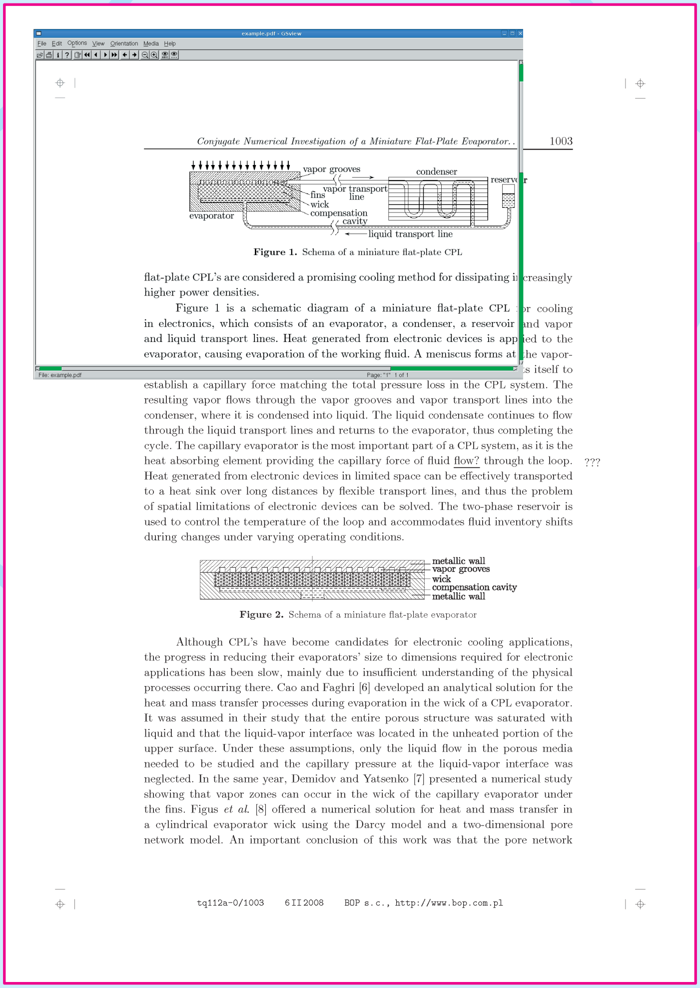
reviewer of PostScript
and PDF documents

PS_View

reviewer of PostScript and PDF documents

- large size documents (A2, B1, . . .)
- long documents (hundreds of MB)
- Bigg zoom
- precise measurements
- restart (restoring the recent view)

Page paradigm



Conjugate Numerical Investigation of a Miniature Flat-Plate Evaporator... 1003

Figure 1. Schema of a miniature flat-plate CPL

flat-plate CPL's are considered a promising cooling method for dissipating increasingly higher power densities.

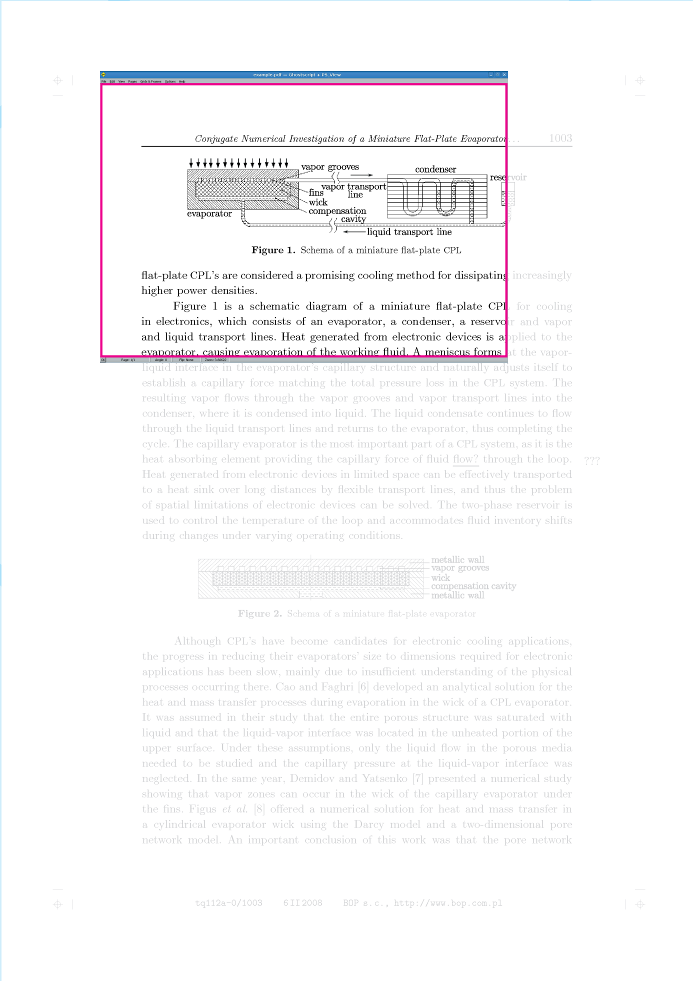
Figure 1 is a schematic diagram of a miniature flat-plate CPL for cooling in electronics, which consists of an evaporator, a condenser, a reservoir and vapor and liquid transport lines. Heat generated from electronic devices is applied to the evaporator, causing evaporation of the working fluid. A meniscus forms at the vapor- ... s itself to establish a capillary force matching the total pressure loss in the CPL system. The resulting vapor flows through the vapor grooves and vapor transport lines into the condenser, where it is condensed into liquid. The liquid condensate continues to flow through the liquid transport lines and returns to the evaporator, thus completing the cycle. The capillary evaporator is the most important part of a CPL system, as it is the heat absorbing element providing the capillary force of fluid flow? through the loop. ??? Heat generated from electronic devices in limited space can be effectively transported to a heat sink over long distances by flexible transport lines, and thus the problem of spatial limitations of electronic devices can be solved. The two-phase reservoir is used to control the temperature of the loop and accommodates fluid inventory shifts during changes under varying operating conditions.

Figure 2. Schema of a miniature flat-plate evaporator

Although CPL's have become candidates for electronic cooling applications, the progress in reducing their evaporators' size to dimensions required for electronic applications has been slow, mainly due to insufficient understanding of the physical processes occurring there. Cao and Faghri [6] developed an analytical solution for the heat and mass transfer processes during evaporation in the wick of a CPL evaporator. It was assumed in their study that the entire porous structure was saturated with liquid and that the liquid-vapor interface was located in the unheated portion of the upper surface. Under these assumptions, only the liquid flow in the porous media needed to be studied and the capillary pressure at the liquid-vapor interface was neglected. In the same year, Demidov and Yatsenko [7] presented a numerical study showing that vapor zones can occur in the wick of the capillary evaporator under the fins. Figus *et al.* [8] offered a numerical solution for heat and mass transfer in a cylindrical evaporator wick using the Darcy model and a two-dimensional pore network model. An important conclusion of this work was that the pore network

tq112a-0/1003 6 II 2008 BOP s.c., http://www.bop.com.pl

Frame paradigm



Conjugate Numerical Investigation of a Miniature Flat-Plate Evaporator... 1003

vapor grooves
condenser
reservoir
vapor transport line
fins
wick
compensation cavity
evaporator
liquid transport line

Figure 1. Schema of a miniature flat-plate CPL

flat-plate CPL's are considered a promising cooling method for dissipating increasingly higher power densities.

Figure 1 is a schematic diagram of a miniature flat-plate CPL for cooling in electronics, which consists of an evaporator, a condenser, a reservoir and vapor and liquid transport lines. Heat generated from electronic devices is applied to the evaporator, causing evaporation of the working fluid. A meniscus forms at the vapor-liquid interface in the evaporator's capillary structure and naturally adjusts itself to establish a capillary force matching the total pressure loss in the CPL system. The resulting vapor flows through the vapor grooves and vapor transport lines into the condenser, where it is condensed into liquid. The liquid condensate continues to flow through the liquid transport lines and returns to the evaporator, thus completing the cycle. The capillary evaporator is the most important part of a CPL system, as it is the heat absorbing element providing the capillary force of fluid flow? through the loop. ??? Heat generated from electronic devices in limited space can be effectively transported to a heat sink over long distances by flexible transport lines, and thus the problem of spatial limitations of electronic devices can be solved. The two-phase reservoir is used to control the temperature of the loop and accommodates fluid inventory shifts during changes under varying operating conditions.

metallic wall
vapor grooves
wick
compensation cavity
metallic wall

Figure 2. Schema of a miniature flat-plate evaporator

Although CPL's have become candidates for electronic cooling applications, the progress in reducing their evaporators' size to dimensions required for electronic applications has been slow, mainly due to insufficient understanding of the physical processes occurring there. Cao and Faghri [6] developed an analytical solution for the heat and mass transfer processes during evaporation in the wick of a CPL evaporator. It was assumed in their study that the entire porous structure was saturated with liquid and that the liquid-vapor interface was located in the unheated portion of the upper surface. Under these assumptions, only the liquid flow in the porous media needed to be studied and the capillary pressure at the liquid-vapor interface was neglected. In the same year, Demidov and Yatsenko [7] presented a numerical study showing that vapor zones can occur in the wick of the capillary evaporator under the fins. Figus *et al.* [8] offered a numerical solution for heat and mass transfer in a cylindrical evaporator wick using the Darcy model and a two-dimensional pore network model. An important conclusion of this work was that the pore network

tq112a-0/1003 6 II 2008 BOP s.c., http://www.bop.com.pl

Paradigm of

page

frame

Paradigm of

page

- fast and smooth panning
- possibility of buffering images
- simple rendering interface

frame

Paradigm of

page

- fast and smooth panning
- possibility of buffering images
- simple rendering interface

frame

- very large zoom
- large files
- efficiency

PostScript

Page description language

PostScript

Page description language

Programming language

PostScript

Page description language

Programming language

- complete procedural language
- stack based, Reverse Polish Notation
- advanced data structures (filters, transformations, color spaces, rasters)

```
/Helvetica 12 selectfont
0 0 moveto (Hello, world!) show
showpage
```

PS_View

First and second versions were written entirely in PostScript

PS_View

First and second versions were written entirely in PostScript

Third version

(quick reading of long files)

Perl

Fourth version

(Graphical User Interface)

C (Win32 API)

And fifth version

(multi-platform)

???

Assumptions for the fifth generation

- at least for Linux and MS Windows
- the more systems, the better
- modular and easily expandable
- Open Source
- easy and wide configuration

Assumptions for the fifth generation

- at least for Linux and MS Windows
- the more systems, the better
- modular and easily expandable
- Open Source
- easy and wide configuration

Java? Python? Tc/Tkl?
wxWidgets? GTK+? FLTK?

(wxPython, PyGTK, wxPerl, PyQt, ...)

Java contra **wxWidgets**

Java + AWT + JNI C++ + wxWidgets + ?

Java contra **wxWidgets**

Java + AWT + JNI

+ modern
+ object-oriented and modular
+ fashionable
– speed (?)
– interface to Ghostscript

C++ + wxWidgets + ?

+ efficiency
+ native look and feel
– ‘old-fashioned’ API

PostScript
Programming language

PostScript
Programming language

- system independent, portable
- not open, but freely available and well documented
- interpreted
- efficient (especially in Ghostscript)

– not modular
– illegible code

wxWidgets

http://www.wxwidgets.org/

wxWidgets

http://www.wxwidgets.org/

- wide multi-platform ability
- native look and feel
- Open Source, under active maintainance
- wide range of useful controls and classes
- good documentation and support
- wxGhostscript (http://wxghostscript.sourceforge.net/)

wxWidgets

http://www.wxwidgets.org/

- wide multi-platform ability
- native look and feel
- Open Source, under active maintainance
- wide range of useful controls and classes
- good documentation and support
- wxGhostscript (http://wxghostscript.sourceforge.net/)

– object programming in C++

Lua

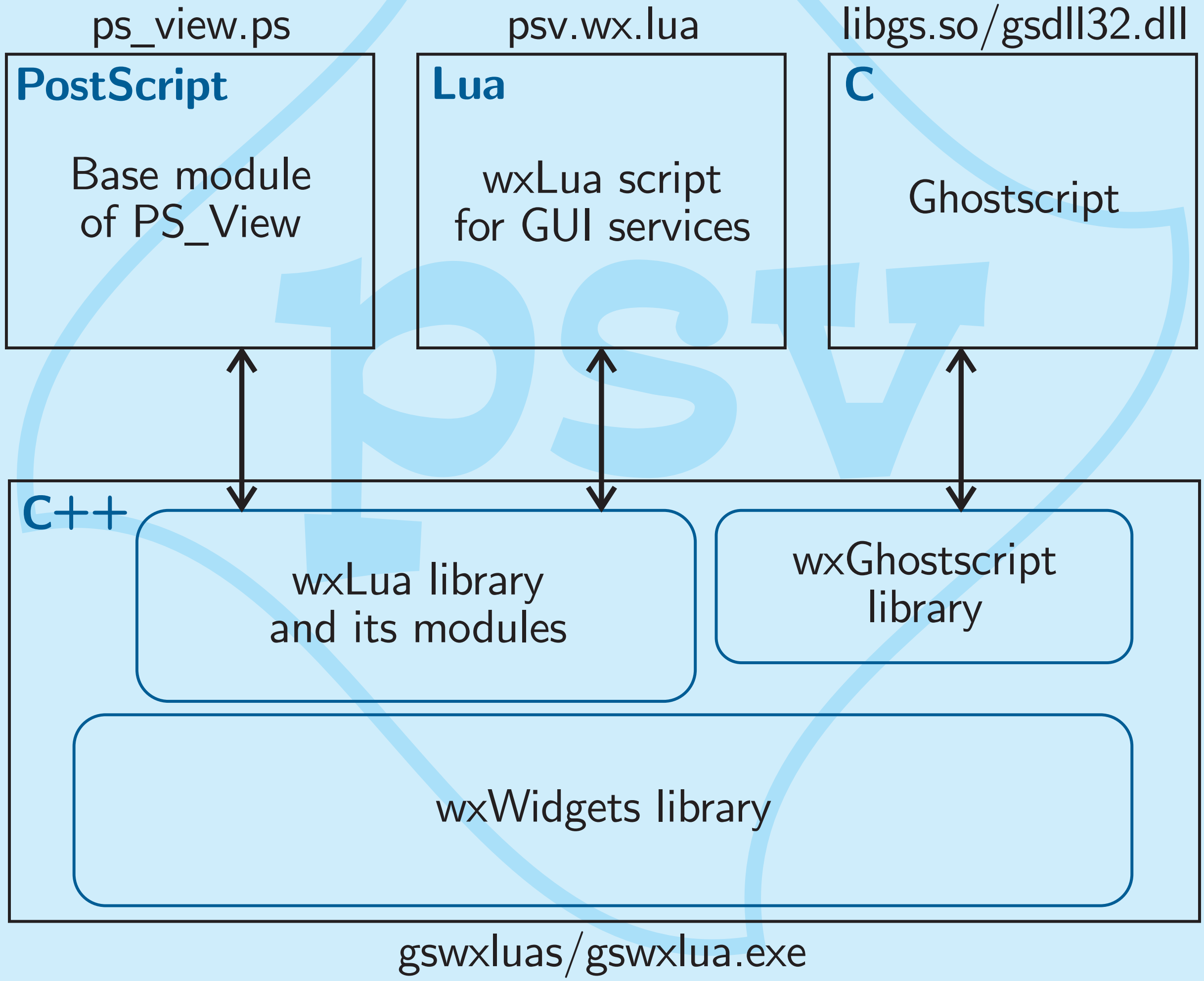
http://www.lua.org/

Lua

http://www.lua.org/

- really: ‘powerful, fast, light-weight’
- platform independent
- simple, but not primitive
- scripting, but very fast
- Open Source, maintained
- robust, gains popularity
- wxLua (http://wxlua.sourceforge.net/)

PS_View


ps_view.ps
psv.wx.lua
libgs.so/gsdll32.dll
PostScript
Base module of PS_View
Lua
wxLua script for GUI services
C
Ghostscript
C++
wxLua library and its modules
wxGhostscript library
wxWidgets library
gswxluas/gswxlua.exe

PS_View now

PS_View now

it works (as you can see)

- aims achieved
- functionality of the previous version
- several new functions added
- more new functions will be added
- many tests still needed

http://psview.sourceforge.net/

PS_View now

Content of package

File name	Description
README	– short info about program
gswxluas	• program which makes interface to Ghostscript and interprets wxLua script (Linux wersion, ELF i386)
gswxlua.exe	• program which makes interface to Ghostscript and interprets wxLua script (MS Windows version, exe Win32)
psv.wx.lua	• wxLua program, module of GUI
psv_view.ps	• PostScript program, base module
psv	– shell script (Linux) which starts PS_View
psv.bat	– batch file (MS Windows) which starts PS_View
psv.exe	– MS Windows EXE file, wrapper equivalent to psv.bat
psv.desktop	– application description for X Window
psv.xpm	– program icon for X Window
psvabout.ps	– PostScript file, basic info
psvusage.pdf	– PDF file, manual (only in Polish)
de, en, pl	– translations directories

PS_View now

Instalation and usage

- installation directory:
  `/usr/local/share/PS_View/`
- executable file:
  `/usr/local/bin/psv`
- translations:
  `/usr/local/share/locale/`

- Usage:
  `psv [PS/PDF file]`

PS_View tomorrow…

PS_View tomorrow: you’re welcome to co-operate

- distribution packages (!)
- programming problems
- documentation and translations
- new functions proposals
- testing (!)
- Open Source
- VC++ compliler

psv

http://psview.sourceforge.net