

# **The DoITPoMS Project: an "embedded" resource?**

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# DoITPoMS

## ❖ What is it?

- "Dissemination of IT for the Promotion of Materials Science"

## ❖ How did it come about?

- collaborators in HEFCE FDTL3 Project 8/99
- additional support from the UKCME
- cooperation with MATTER



# What's in it?

## ❖ **Micrograph Library**

- over 800 micrographs with descriptions
- searchable
- <http://www.msm.cam.ac.uk/doitpoms/miclib/index.php>

## ❖ **Teaching and Learning Packages (TLPs)**

- 22 on web, 10 in development
- <http://www.msm.cam.ac.uk/doitpoms/tlplib/index.php>

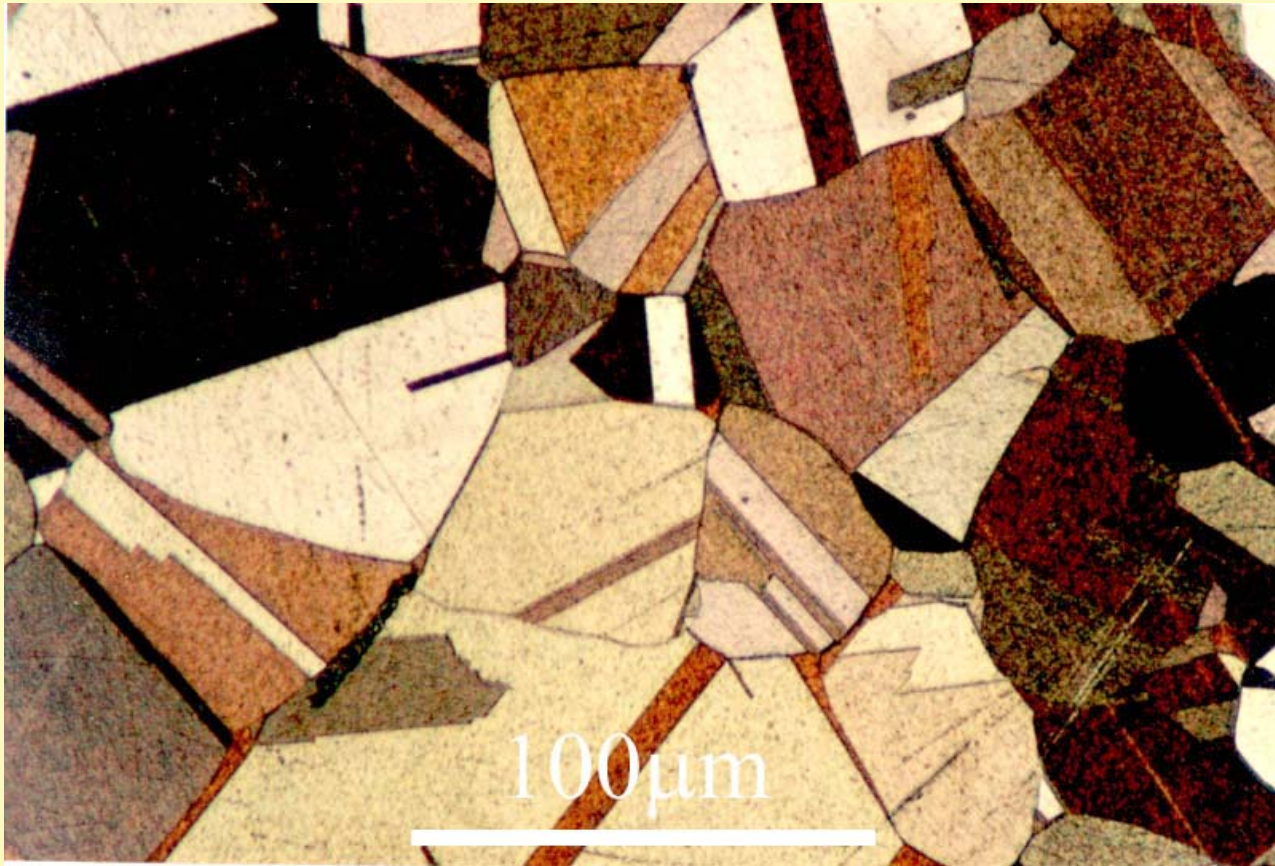
## ❖ **No ipr restrictions for academic use**



## Micrograph no 430

### Brief description

Cu 70, Zn 30 (wt%), recrystallised - annealing twins



# DoITPoMS Teaching and Learning Packages

## Atomic Scale Structure of Materials

This teaching and learning package provides an introduction to crystalline, polycrystalline and amorphous solids, and how the atomic-level structure has radical consequences for some of the properties of the material. It introduces the use of polarised light to examine the optical properties of materials, and shows how a variety of simple models can be used to visualise important features of the microstructure of materials.



### Aims

#### Introduction

**Single crystals: Shape and anisotropy**

**Single crystals: Mechanical properties**

**Single crystals: Optical properties**

**Polycrystals**

**Defects**

**Summary**

**Questions**

**Going further**



# Some lessons from experience

## ❖ Personnel needed to create such resources

- Skilled project staff in addition to academic staff
- Summer vacation students
  - ☑ Students helping to create resources provide ideas, rapid feedback and frank evaluation

## ❖ Some difficulties faced

- Recruitment and retention of skilled project staff
- Browser/platform variations
- Restricted software availability on some institutional networks

## ❖ How were these difficulties overcome?

- Not all have! Over some we have no control



# On-going Work

- ❖ UKCME supporting work developing further TLPs
- ❖ Acquisition of further micrographs (from around the world)
- ❖ CMI (Cambridge-MIT Institute) project developing "Instructor Resource Modules"



# How are the resources being used by us?

## ❖ Academic Staff

- demonstration/illustration in lectures
- preparation for and use in supervisions (tutorials)

## ❖ Graduate Teaching Assistants

- preparation for teaching in practicals
- preparation for and use in supervisions (tutorials)

## ❖ Students in connection with

- preparation for/revision of practicals
- source of information for use with Question Sheets



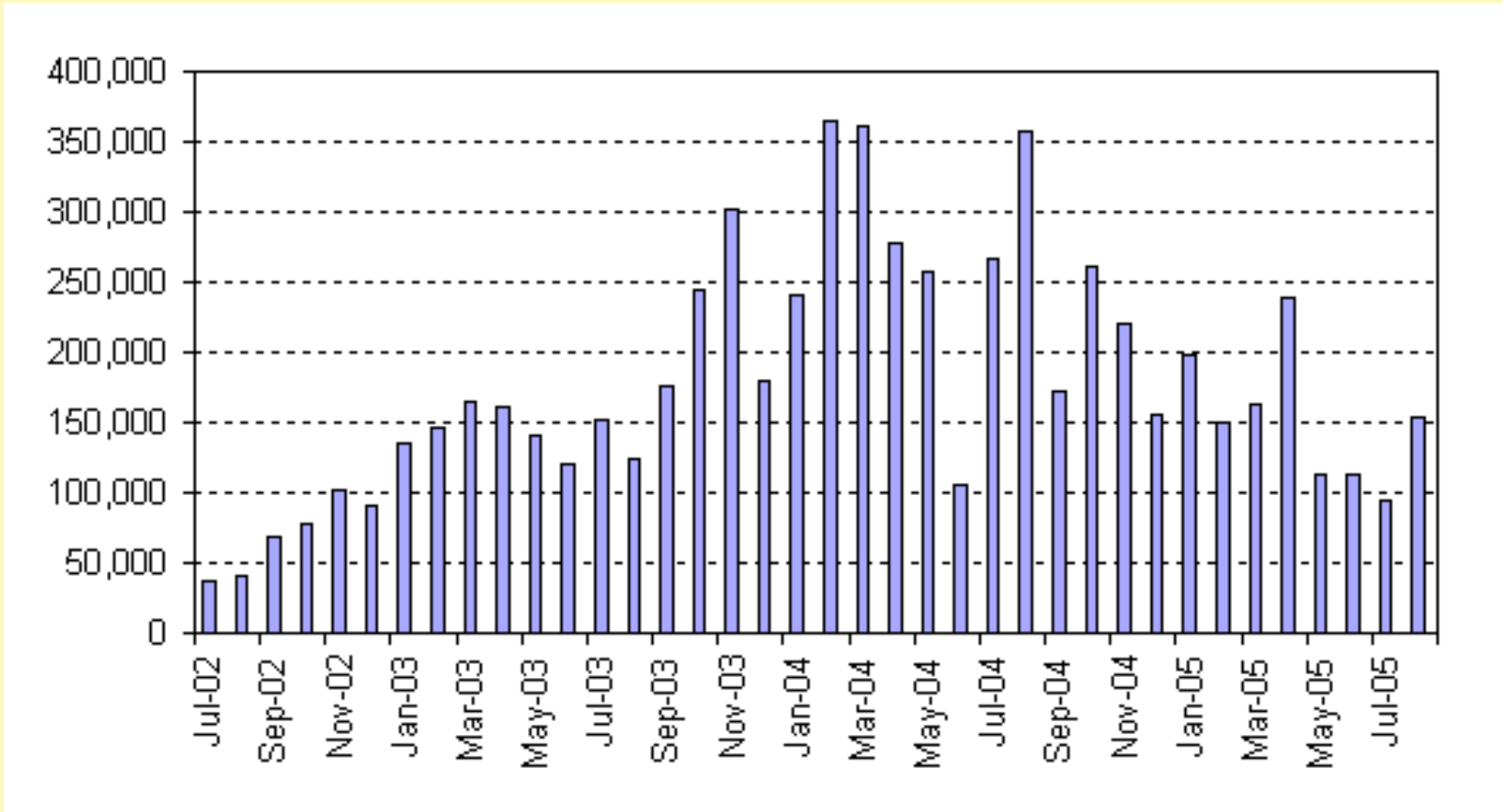
# What impact are they having?

- ❖ Greater awareness of web-based teaching resources generally:
  - amongst students
  - amongst graduate teaching assistants
  - amongst academic staff
  
- ❖ But is DoITPoMS yet "embedded"?



# Usage: Access statistics (world-wide hits per month)

<http://www.msm.cam.ac.uk/doitpoms/access.html>



# Encouraging wider take-up 1

- ❖ What factors encourage take-up of such resources for students in other courses and institutions?
  - resources that are easy to incorporate - bite-size is better
  - that illustrate and augment, rather than sweep away
  - academic staff are given opportunities for hands-on experience
    - ☑ e.g. organise a workshop
  - colleagues from other institutions involved during development



# Encouraging wider take-up 2

## ❖ For other academics to take-up such resources

### ➤ (i) what would they need to **know**;

- ☑ what they wish to achieve!
- ☑ what is available - should be readily located via Subject Centre, Google, Psigate, EEVL, ... (depending on discipline)

### ➤ (ii) what would they need to **do**;

- ☑ consider use within lectures
- ☑ assess the infrastructure implications
- ☑ devise suitable material to encourage students to work through the on-line resources regularly, e.g. question sheets, briefings for practicals



# Factors influencing academic staff 1 perception of available resources

- ❖ **trust - in the content** (and in the authors)
  - former often influenced by knowledge of latter
- ❖ **technical quality**
  - very important; students are accustomed to computer-based material of high technical quality
- ❖ **ease of use - by staff;** expected ease of use by students
  - standard layout
  - searchable



# Factors influencing academic staff 2

## ❖ in favour

- recognition of current student expectations

## ❖ against

- time-commitment in incorporating "external" resources into lectures or practicals (*vs* the next RAE)
- "I could do better, if only I had the time"

## ❖ critical mass

- successful initiation is much more likely with more than one enthusiast based in the Department (*vs* central exhortation)

## ❖ high-level support

- recognition - it's more than a spare-time activity!
- provision of resources for implementation



# Final thoughts

## ❖ What has been particularly successful in our project?

- Involvement of students and several academic staff
- Employment of Project Officer with substantial (school) teaching experience and high-level computing skills

## ❖ What about the future?

- Teaching resources, especially computer-based resources, soon grow tired; maintenance is essential; skilful staff input will continue to be required to provide TLC

<http://www.msm.cam.ac.uk/doitpoms/>

