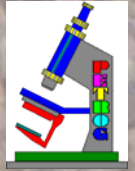


PETROG

PETROGRAPHIC
DATA COLLECTION
SOFTWARE

What is PETROG?



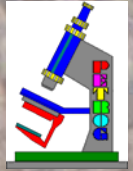
- **A radical new approach to petrographic data collection**
- **A replacement for the traditional 12/20 channel point counter control box & paper tick sheets**
- **A software system designed for the analysis of siliciclastic & carbonate sedimentary rocks**
- **A customisable GUI for petrographic textural and compositional data capture**
- **Stored images from a video camera link facilitating repeat analysis for QA & illustrative purposes**

Who should be Interested?



- 👉 **Oil Industry Geologists - designed primarily as an oil industry petrographic analysis tool**
- 👉 **Petrologists & Petrographers - configurable for igneous, metamorphic, ore or coal petrographic data collection**
- 👉 **Geological Teachers - configurable for academic training & examination purposes**

Key Features



- **Quantitative (modal) and visual estimation analysis of Texture & Composition**
- **Dictionaried data entry, with authentication by permitted relationship/attribute rules**
- **Multiple component paragenetic relationships**
- **Microporosity component calculation for matrix and authigenic minerals using defined attributes**
- **Editing of captured data without changing original data**

Key Features cont.



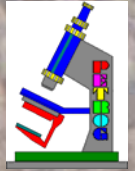
- **Interactive review and editing of data**
- **Calculation of original mineralogical and porosity composition**
- **Storage of all or selected images (JPEG files) facilitating QA of collected data**
- **User customisation of GUI**
- **Relational database based on POSC compliant data model**

Data Capture - Texture



- **Grain size determined from either, calibrated video image, eyepiece scale value, or entered as 'real' value**
- **Grain morphology & rock fabric entered using user-selectable on-screen visual comparators**

Data Capture - Composition



Compositional data are captured by :

☞ **Point counting (modal analysis) using an electromagnetic stepping stage**

or

☞ **Visual estimation using selectable on screen grain abundance comparators**

Data Capture-Composition cont.



Compositional data items are divided into 8 analytical classes :

➡ Detrital grains

➡ Bioclastic grains

➡ Carbonate grains

➡ Matrix

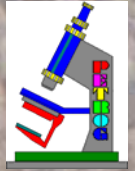
➡ Authigenic minerals

➡ Porosity

➡ Organic material
(organic particles &
coal macerals)

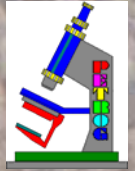
➡ Artifacts

Data Capture-Composition cont.



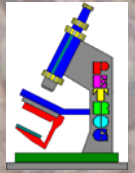
- **Compositional data items qualified by morphologic form, preservational features and/or distribution in pore space**
- **Diagenetic relationships between data items recorded at upto 3 relationship levels, e.g. authigenic mineral X, cementing porosity Y, created by the dissolution of grain Z**
- **Relationships between various components tested against permissible relationships defined by rules**

Data Editing & Review



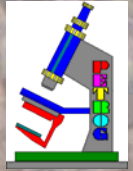
- **Captured compositional data can be edited and reviewed; i.e. entry of 'trace' components or 'correction' of observed porosity to core analysis values**
- **Data review allows examination of images and comments stored during data capture, alongside associated compositional data**

Data Analysis



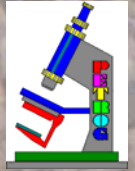
- **Calculation of microporosity based on user defined distribution within matrix and authigenic mineral components**
- **Calculated microporosity optionally scaled to fit the difference between observed and measured porosity values**
- **Original mineralogical and porosity composition (excluding compactional effects) calculated from observed data**

Data Storage



- ➡ **Data stored within a relational project database**
- ➡ **Data model follows the POSC Epicentre model structure, with POSC Epicentre extension rules and meta-rules for data not explicitly included in Epicentre**
- ➡ **Data can be readily shared with other POSC-compliant databases, providing a consistent, familiar structure and terminology, & delivering a robust model for the future**
- ➡ **Data can be exported in customisable formats for storage within corporate databases or for further analysis within specialist software packages**

Data Storage cont.



- **Data captured by PETROG are referenced to a series of hierarchically organised master dictionaries kept within the PETROG database**
- **Projects, wells and samples have preparation, analysis technique and stratigraphic definition data associated with them, facilitating future data mining**
- **Stored images (automatically or at user discretion) are linked to the gathered data for later data editing or review**

Data Search



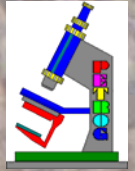
- ➔ **Compositional data search can be carried out by sample, selecting on class, item, qualifier and relationship at all levels**

Data Exchange/Export



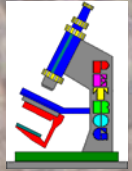
- **Dictionaried data collection facilitates the exchange of data between consortium members, service and commissioning companies**
- **Data can be exported in customisable formats to 3rd party software or corporate databases, including Geologica's Exemplar diagenetic modelling software**

Data Import



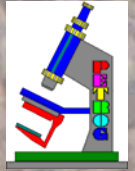
- **Core analysis data and sample identifiers (depth, plug no) can be imported into PETROG, facilitating the rapid definition of samples**
- **Legacy petrographic and related data types can be imported by mapping to equivalent PETROG dictionaried item(s)**
- **Image files (paired PPL and XPL) may be imported allowing remote analysis of samples, training and academic examination**

User Interface



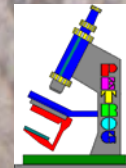
- **Analytical methodology of PETROG mimics point counter and tick sheet approach, minimising familiarisation time**
- **PETROG is organised in functional sections to lead the user through the data collection process**
- **User configuration of PETROG compositional data collection window, to suit project requirements**
- **PETROG juxtaposes the data collection interface with images from a microscope-mounted RGB analogue video camera**
- **Context sensitive help written by users for users**

System Requirements



- **PETROG can be run on IBM compatible PCs using Microsoft WINDOWS 95™, 98™ or NT 4.0™ operating systems**
- **PETROG software is linked to a Prior Instruments electromagnetic stepping stage through a supplied control unit**
- **Customised linkage to other stepping stages can added if requested**

Are you Interested?



Contact Geoscience Wales Limited

at

admin@geoscience-wales.co.uk

To obtain your fully functional, demo CD-ROM

or

Visit the website www.petrog.com