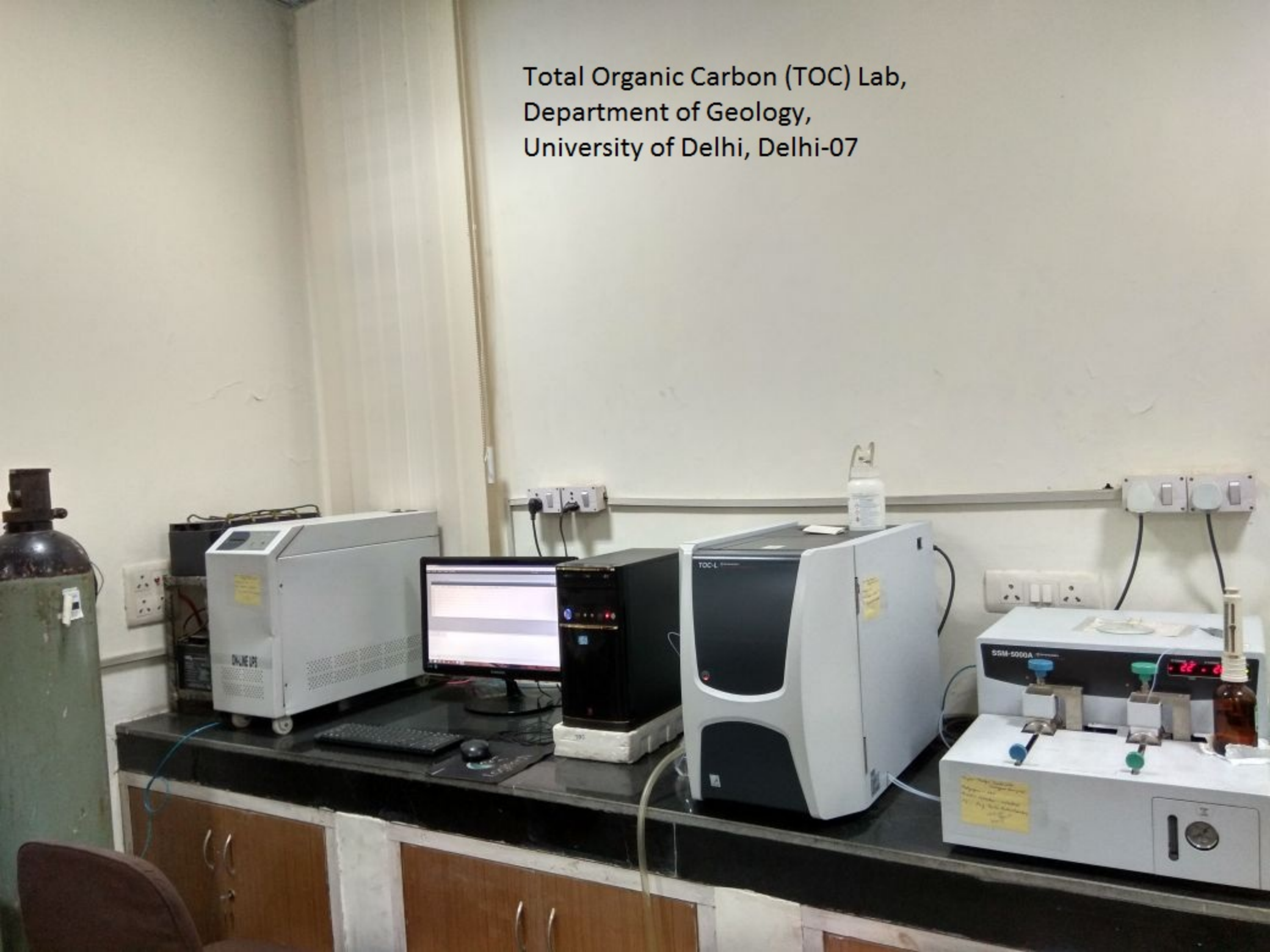

Total Organic Carbon (TOC) Lab,
Department of Geology,
University of Delhi, Delhi-07
TOC-L
SSM-5000A


Fluid Inclusion
Microthermometry
Advance Microscopy Lab,
Department of Geology,
University of Delhi, Delhi-07


Microscopy Lab,
Department of Geology,
University of Delhi, Delhi-07


Total Organic Carbon (TOC) Lab.
Department of Geology,
University of Delhi, Delhi-07


Micropaleontology Lab,
Department of Geology,
University of Delhi, Delhi-07

LAB FACILITY: EXPERIMENTAL STRUCTUTAL GEOLOGY LABORATORY

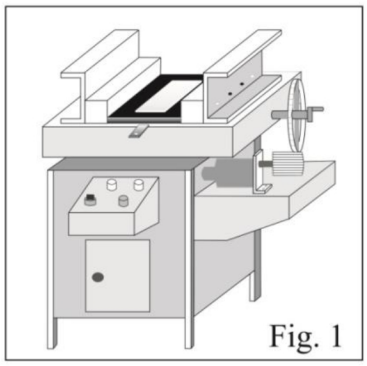


Fig. 1

The Experimental Structural Geology Laboratory was set up in the Department of Geology, University of Delhi in 2006 to study and analyze the fundamental processes invloved in the deformation of rocks in nature through scaled analog modelling experiments under varying boundary conditions. The first deformation rig was built indigenously by the University Science Instrumentation Centre (USIC) of the University of Delhi and is working till now. It is a combined simple shear and pure shear machine and capable of deforming soft analog models (ductile or brittle-ductile layered) (Fig. 1). The machine consists of a base plate and two motor driven pistons which can move forward and backward at a slow rate (1mm/min) and provide compression and extension respectively to the model. Angular wooden blocks can be attached with the moving pistons to deform the models at different angles (viz. α = 0°,15°,30°,45°,60° and 90°), thus providing orthogonal and oblique extensions or compression. This was followed by a sandbox installed in 2009 (Fig. 2). This is used to perform experiments of thrusting and/or normal faulting using dry sand models. This is mainly an orthogonal extension/compression apparatus, but can be used for oblique convergence and/or divergence also. Another combined simple shear and pure shear machine was installed in the laboratory in 2016 (Fig.3), which has a base plate and two moving pistons. One piston can move forward and backward resulting in an orthogonal compression or extension of the model respectively. Another piston can move parallel to itself providing layer parallel either sinistral or dextral shear to the model. Speed of both the pistons can be changed from 0.2mm/min to 2mm/min. By changing the ratio of speed of the pistons, the angle of extension/compression can be effectively changed – thus creating oblique extension /compression at different angles. The advantage of this machine over the earlier ones is that it can provide different phases of deformation to a single model at different angles of obliquity only by changing the ratio of speed of the moving pistons.

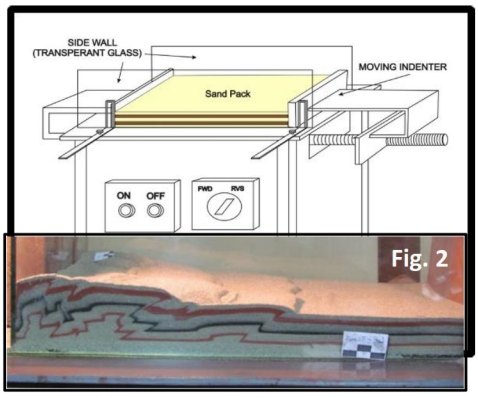


Fig. 2

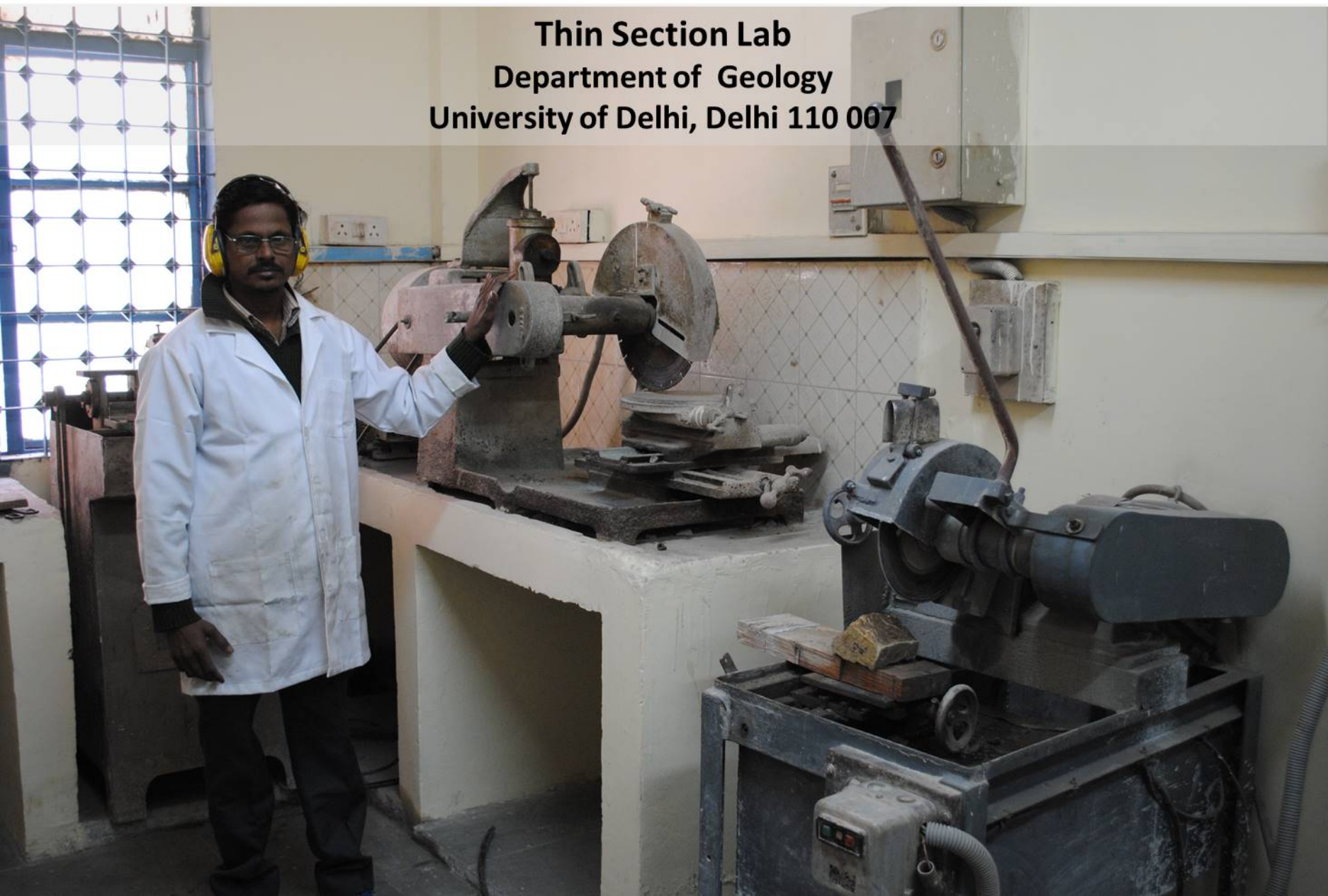

Fig. 3

Built indigenously at a very low cost (average cost <Rs. 50,000) these machines has been extremely useful in analogue modeling studies. Using soft models made of plaster of paris, clay, sand, plasticine etc., a lot of experimental work have been carried out a number of papers have been published in internationally reputed journals like Journal of Structural Geology (6th hottest article in JSG in 2014), Marine and Petroleum Geology, International Journal of Earth Sciences (Geologische Rundschau), Journal of Earth System Science etc. Five M.Sc. dissertations, one Ph.D. and one post-doctoral project have been carried out. A number of students are currently using this research facility.

Geology Museum

Department of Geology

University of Delhi, Delhi 110 007


Thin Section Lab
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University of Delhi, Delhi 110 007


Experimental Structural Geology Lab, Department of Geology, University of Delhi, Delhi-07


Experimental Structural Geology Lab, Department of Geology, University of Delhi, Delhi-07


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PANalytical
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