I believe that it would be quite inexpensive to maintain a website by the proposed NGO and the modest financial resources that are needed would be forthcoming. What is crucial is the need for a band of committed scientists who will create this information base, and maintain it. We can start with a small number of scientific issues which we think are immediately relevant in our context. A specific area can be entrusted to a small number of people who will also take the responsibility to respond to queries from scientists, educationists, social organizations, etc. I am of the view that the proposed NGO should simply operate out of a single room in a city like Bangalore and can be supported by scientists throughout the country mostly by the electronic medium.

The membership should be open to all concerned citizens of India. Even as I write these lines, a news item has appeared that this year in Rajasthan due to further drop in the water table, drinking water has dissolved salts far in excess of permissible health limits. While it is certainly true that there are Indian scientists who understand these problems and even have answers, their expertise is perhaps either unutilized or under-utilized.

I am grateful to receive your criticisms and suggestions. I can be reached by Tel: (res) 080-331 6296 (off) 080-309 2396; fax: 080-334 1683; e-mail: jpcts@cts.iisc.ernet.in

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Earthquake prediction – A distant dream

This has reference to the article by K. R. Rao (Curr. Sci., 1999, 77, 1061–1066) about a debate on earthquake prediction, conducted by Nature where several specialists in Earth Sciences participated. Rao’s summary of the debate is very informative and useful to earth scientists. The opinion of the various experts is as diverse as the earth itself. Earthquake prediction shall remain a distant dream although earthquakes are taking place ever since the earth came into existence. Therefore their mention in the Vedas, Puranas and Epics is nothing special except that we should give them credit for faithfully recording these events which are both of chronological and historical importance.

Scientists who are now engaged in the study of earthquakes the world over, are spending their time and energy as well as their nation’s money. Although their studies continue to add to the wealth of knowledge, the prediction of earthquakes continues to be a distant mirage and these quakes shall continue to cause havoc to both life and property.

One significant point in the debate made by Ian Main in the concluding remarks is ‘... it is not the earthquakes themselves which kill the people, it is the collapse of man-made structures which does most damage’. This statement is absolutely correct and its meaning has not been appreciated by many geo-scientists. Hence it is now appropriate to bestow a part of our attention to the design, fabrication and layout of buildings in earthquake-prone areas such as the slopes and foothills of the Himalayan belt where there is a general concentration of human habitation because of water resources, vegetation, etc. When an earthquake occurs in these areas the loss of life is more due to roof collapse of buildings. The following suggestions are made in order to reduce the loss of human lives and buildings. (1) Multi-story buildings should not be constructed, and (2) the roof of the buildings should be made of either GI sheets or AC sheets or from any other light material.

The Central Building Research Institute at Roorkee is ideally suited to undertake such studies and evolve a suitable roof which will be light weight, fairly strong and durable. These light roof materials can be easily replaced after damage by an earthquake.

Rao in his conclusion has expressed the opinion of Ian Main for designing suitable infrastructure to minimize the catastrophic impact. Rao has very aptly concluded that ‘this approach to earthquake problem is more important than earthquake prediction research’.

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Global geological resource locator

With the advent of Internet and resultant development of information superhighway, accessibility to state-of-the-art knowledge has been made easy for all those who are well entrenched to face the information boom. Our country, although lagging behind during the initial period of these developments, is striving ahead and promises to become a champion of this cause.

The infrastructure development and countrywide network of scientific laboratories and universities through networking has received a shot in the arm when all the CSIR laboratories are
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linked and the major universities and IITs are connected through various networking projects such as educational and research network (ernet), etc. However, the availability of limited resources and infrastructure in most parts of the research institutions and institutions of learning have posed severe constraints on accessibility of these information highways to the geoscientific workers of India.

The WEB is a monster from where we could collect any information. There are many search engines and metasearch engines that could bring links to sites that contain information pertaining to the phrases of search strings. However, given cognisance to the enormity of the WEB, often those who search required information end up with unwanted or not related links among the really related links. Our experience shows that there is a lot of stuff on the WEB related to geosciences, but getting the exact information is often found to be a tough task. For example, when Yahoo (a famous search engine) was employed for searching geological societies, it has given 1389 links in which only 7 are hypertext links to 'geological societies', which in turn is learnt after browsing as many possible links as browsing all these links would be unimaginable.

Given cognisance to all these, a site called Global Geological Resource Locator (GGRL) has been created sourcing links of geological sites the world over. This site is targeted primarily to the Indian geological community to serve them the required information at a single location. The GGRL is a web page that contains catalogues of different categories of web sites. The user has to click the related category which will lead to a list of hypertext links from where, the required site could be selected and browsed.

Presently 37 categories (for example, academic societies, remote sensing, mineralogy, geological survey organizations, etc.) are available in the site. Constant upgradation is also being made. The site could be accessed at http://www.geocities.com/geolink/ggrl.html.

Another category to this site is under construction that specifically concentrates on providing information regarding Indian geological and related professional societies, Indian universities and research labs engaged in geological and related fields. The readers are requested to send information on the same, so that they could be included, and benefit the geological community as well as the prospective students who intend pursuing their studies in Indian universities and institutions of research.

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NEWS

A novel method of growing bulk single crystals

Organic single crystals of substituted benzene derivatives with high optical nonlinearities and low melting temperatures are very promising materials for future optoelectronic and nonlinear optical applications. However, it is difficult to grow large size organic single crystals. Recently, Sankaranarayanan of Alagappa University, Karaikudi and Ramasamy of Anna University, Chennai¹, have successfully grown a large size single crystal of benzil having hexagonal facets (Figure 1) by a novel seeding method using a microtube and based on Czochralski pulling technique. The conventional Czochralski technique involves three steps, viz. melting the source material, seeding the melt and pulling the crystal. In this recent study, an attempt is made to seed the melt with a stainless steel microtube of 6 μ ID. Due to capillary rise, a fine column of melt is crystallized inside the microtube which is used as a primary seed. In their experimental set-up (Figure 2), the material is melted in a static glass crucible, which is kept inside an independently controlled two-zone Kanthal wire-wound furnace and the microtube is dipped in the melt. The

Figure 1. Benzil single crystal 'C' with the microtube as a seed. Reprinted from Journal of Crystal Growth, vol. 193, K. Sankaranarayanan and P. Ramasamy, 'Microtube-Czochralski technique (μT-C2): a novel way of seeding the melt to grow bulk single crystal', pp. 252-256, © 1998, with permission from Elsevier Science.