

## Strain patterns and growth textures around inclusions in diamond

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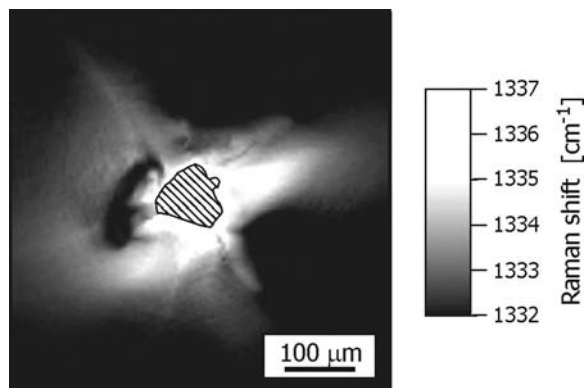
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We report results of recent investigations of diamond crystals containing high-pressure inclusions. Confocal Raman measurements yielded *in situ* information on (i) the mineralogy of inclusions, (ii) their degree of lattice order, (iii) remnant pressures acting on the inclusions, and (iv) compressive strain in the diamond adjacent to the inclusions, caused by incomplete pressure relaxation due to heterogeneous expansion upon external pressure relaxation.

Samples were characterized in even more detail using the Raman mapping technique. Maps visualize pressure and strain distribution patterns in the diamond surrounding inclusions (Nasdala et al. 2003). Furthermore, it has become possible to reveal the internal growth zoning of the diamond host, which allows for more sound genetic assignments of proto-, syn, or epigenetic inclusions.

Figure 1: Halo of compressive strain around a larnite inclusion (hatched) in a diamond, revealed in a map of the position of the LO=TO mode.



### Reference

Nasdala, L., Brenker, F.E., Glinnemann, J., Hofmeister, W., Gasparik, T., Harris, J.W., Stachel, T., and Reese, L., (2003), *Eur. J. Mineral.* **15**, 931-935.