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Gubelin Newsletter #26, Wednesday, January 28, 2009

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#### Headlines:

- \*\*\* Distinction of natural and freshwater cultured pearls by new means
- \*\*\* "Pimp my ICP-MS": Hydrogen nebuliser improves detection limit
- \*\*\* European Gem Symposium with keynote speakers Sir Gabi Tolkowsky and Martin Rapaport
- \*\*\* Important publication on new ruby deposit in Tanzania
- \*\*\* Rapaport features research article on pink diamonds

#### \*\*\* Distinction of natural and freshwater cultured pearls by new means:

Freshwater cultured pearls (mainly Chinese) show strong similarities to natural pearls, for example in their internal structures, which are typically analysed by X-radiography. However, the minute features in the centre of the pearls, which can reveal their natural or cultured origins, can be the subject of different interpretations. The latest research by Dr. Stefanos Karampelas, scientific researcher at the Gubelin Lab, provides a new and promising approach to this thorny issue by combining various spectroscopic methods to unambiguously distinguish some types of cultured pearls from natural ones. Together with his fellow researchers, he has published his findings on pearls in the December issue of *Revue de Gemmologie A.F.G.*, pp 12-17, in the *European Journal of Mineralogy*, 2009, Vol 21, No 1, and also in the latest issue of *Gems & Gemology*, pp 374 - 375.

#### \*\*\* "Pimp my ICP-MS": Hydrogen nebuliser improves detection limit:

Recently, a new Laser Ablation-ICPMS measurement routine has been established at the Gubelin Gem Lab using small quantities of hydrogen introduced into the sample gas flow. The presence of hydrogen in the system significantly increases the sensitivity of most elements, allowing the detection of lower quantities of characteristic elements for origin determination or treatment detection (e.g. Be diffusion of sapphires). The increased sensitivity of this routine potentially allows a further reduction in the amount of sample material used for the LA-ICPMS method.

#### \*\*\* European Gem Symposium with keynote speakers Sir Gabi Tolkowsky and Martin Rapaport:

The Swiss Gemmological Society has announced the 2009 European Gemmological Symposium, to be held in Berne, Switzerland's capital, from Friday, June 5 to Sunday, June 7, 2009. The programme comprises presentations on a range of topics including diamonds, coloured stones, pearls and the jewellery trade; overall focus is on state-of-the-art gemmological research. Highlights of the symposium are the keynote addresses by Sir Gabi Tolkowsky and Martin Rapaport. The Gubelin Gem Lab is a proud co-organiser of this event. Visit [www.gemmologie.ch](http://www.gemmologie.ch) for the detailed programme of the symposium and its related fieldtrips.

#### \*\*\* Important publication on new ruby deposit in Tanzania:

The Winter 2008 issue of *Gems & Gemology*, pp 322 – 347, features a comprehensive study of the rubies and sapphires from the Winza deposit in Tanzania, which caught the trade's attention last year. Authored by Gubelin Lab gemmologists and researchers from other institutes, this article provides in-depth analyses of the gemmological properties of these gems and an overview of the local geology as well as of the mining and trading activities in the area.

#### \*\*\* Rapaport features research article on pink diamonds:

Determination of the colour origin in fancy-coloured diamonds is of eminent importance to the diamond trade. Researchers at the Gubelin Gem Lab therefore continue to study the properties of diamonds of both

natural and treated colour. The February issue of the Rapaport magazine features an article on the colour origin of pink diamonds, written by our Dr. Eric Erel.

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