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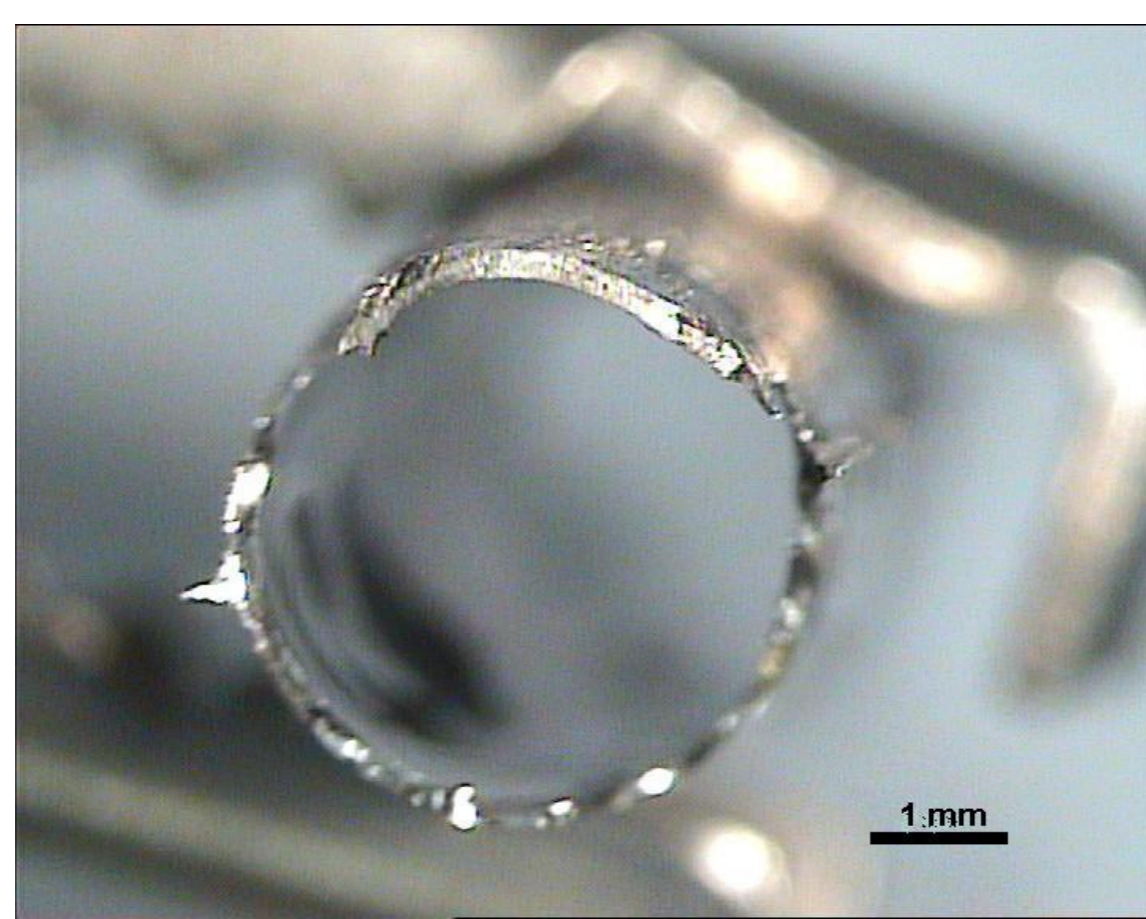
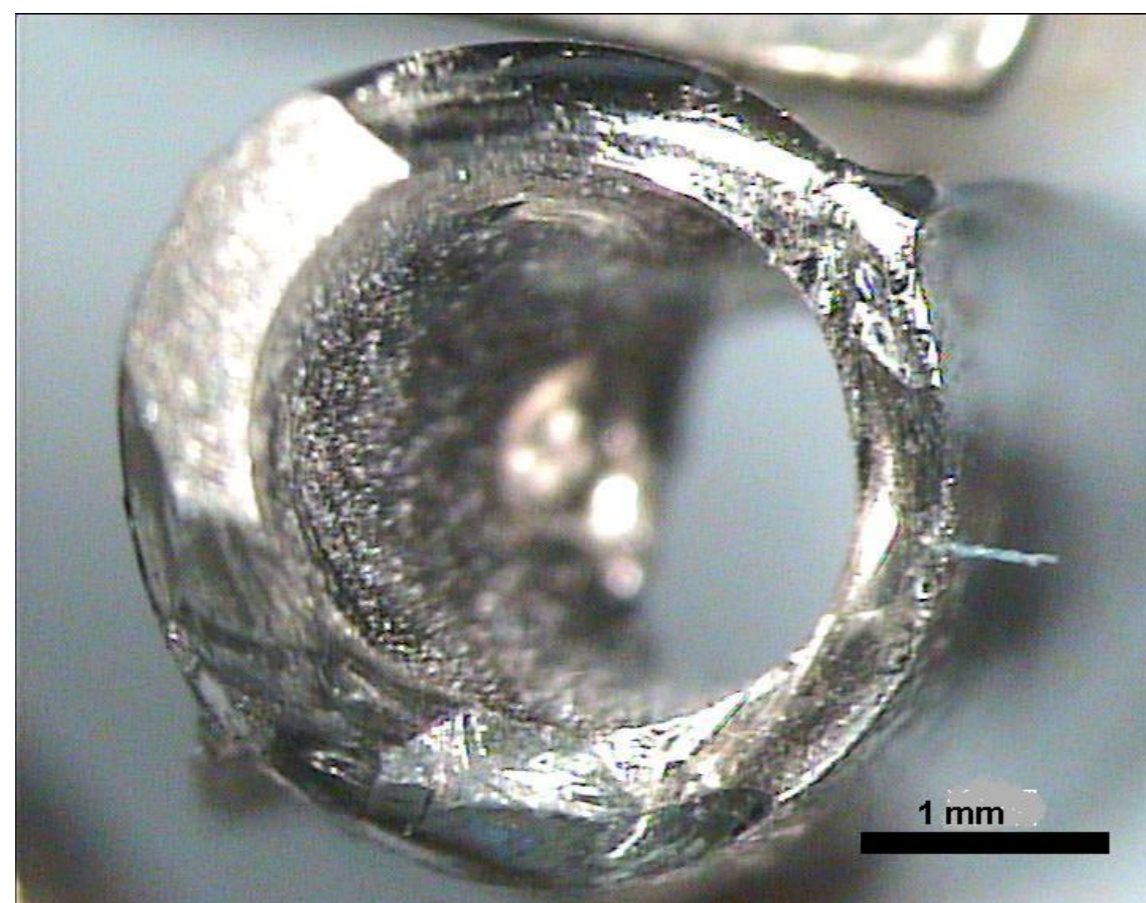
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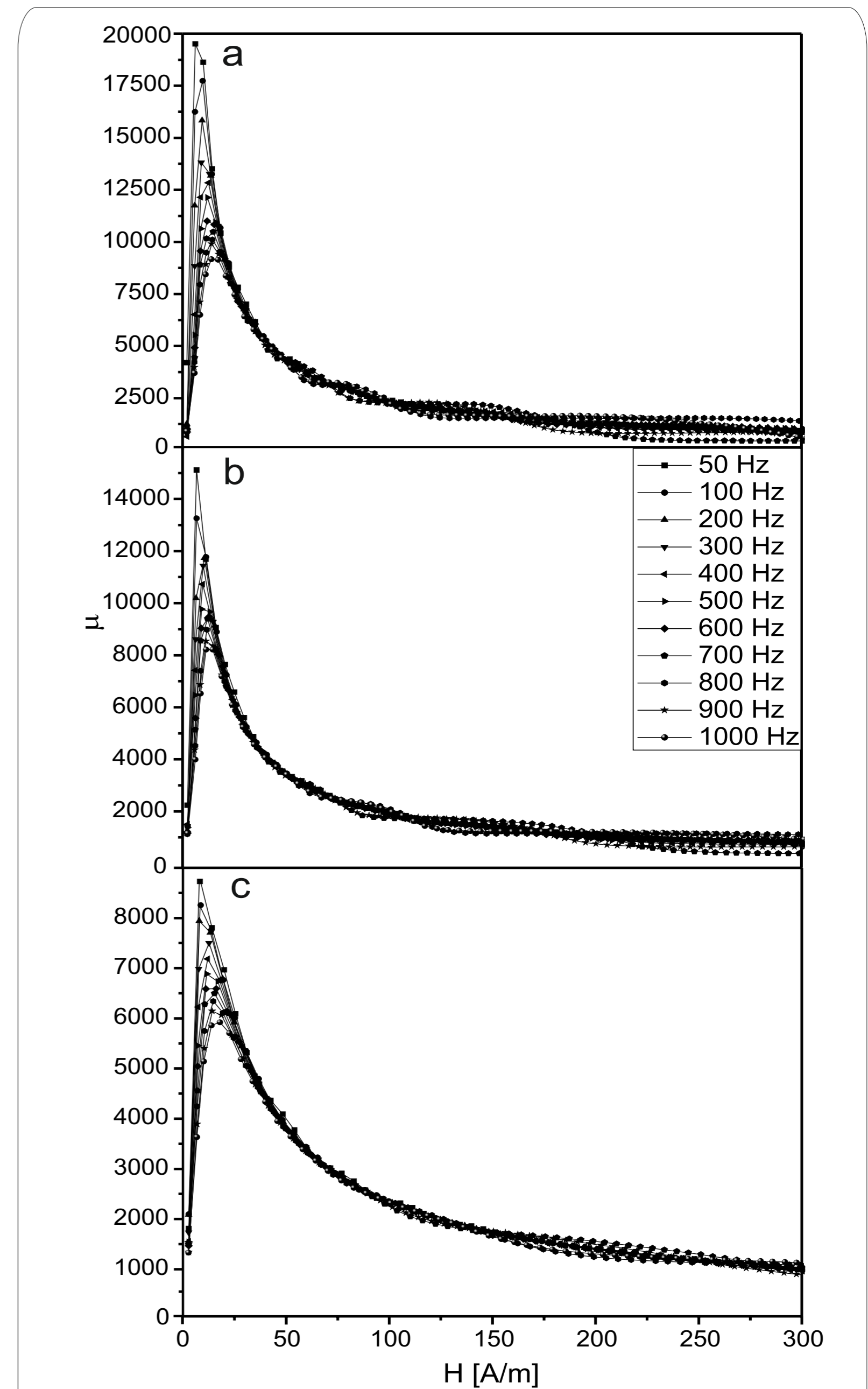
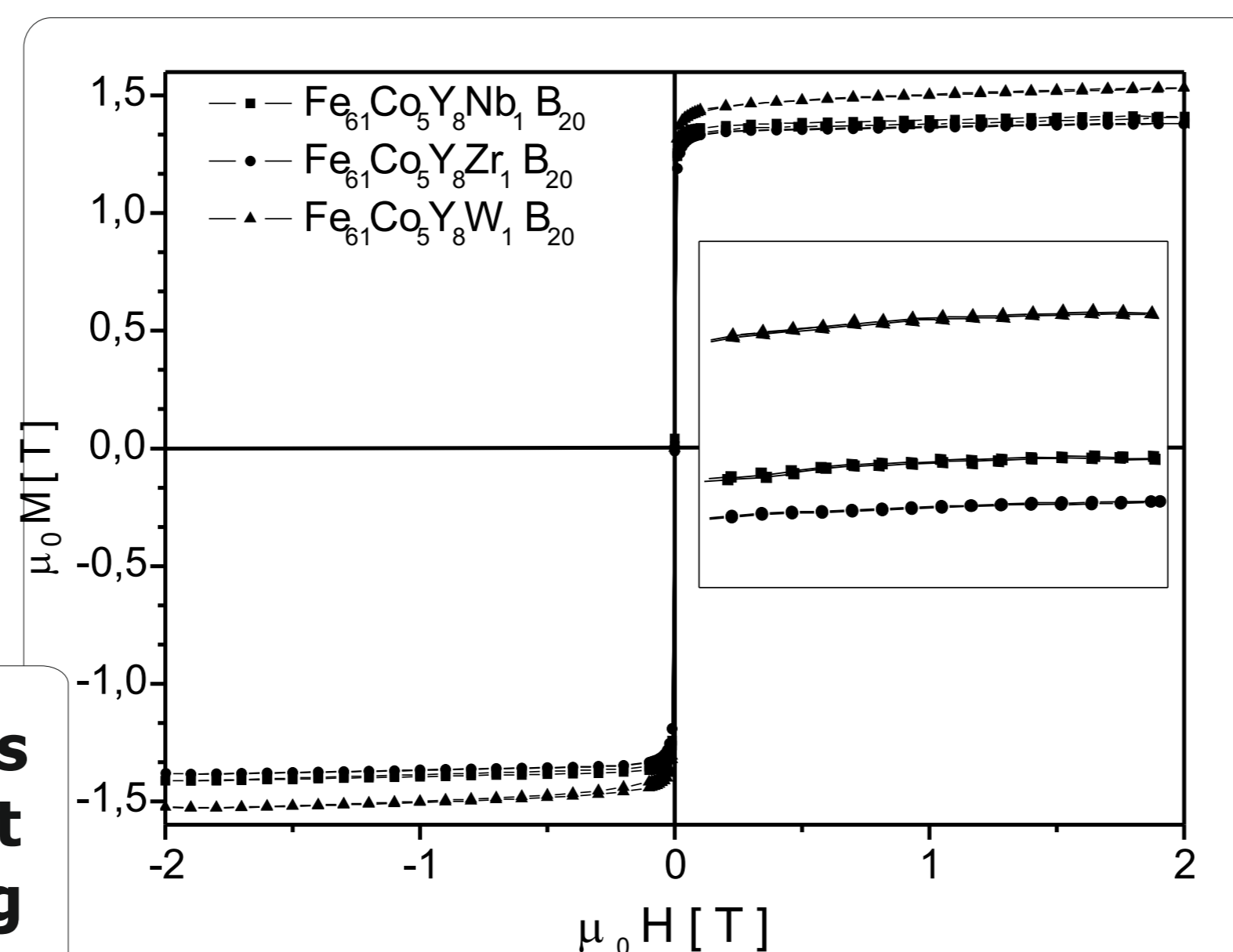
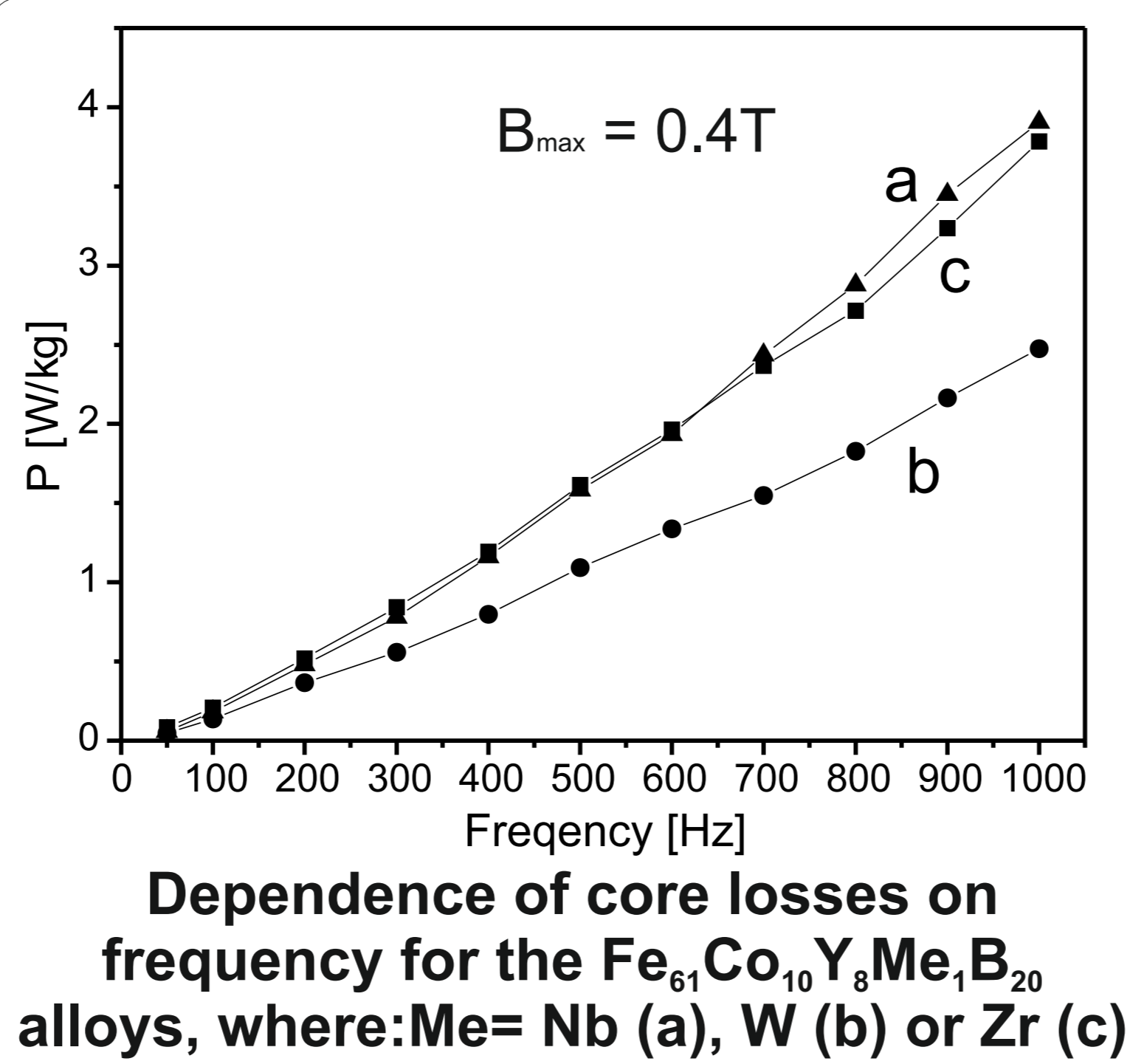
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## Modern, highly energy efficient materials for transformers cores

The project presents a modern method of production, rapidly - quenched, functional amorphous materials. The iron-based alloys are soft ferromagnetic materials, which are characterized by fine magnetic properties: low values of coercitivity field and core losses, high saturation magnetization and Curie temperature. Samples were produced in the form of ribbons with a thickness of about  $30\mu\text{m}$ , and after appropriate preparation (winding toroids) were the perfect material for construction of special applications transformer cores. In addition, amorphous materials exhibit good mechanical properties, high microhardness and corrosion resistance. All described features of these amorphous alloys, in comparison with crystalline alloys with the same chemical compositions and commercially used FeSi sheets, make them much more attractive, for application in the electrical industry.



Toroid shaped-sample



### Conclusion

It can be seen that each of additives had a different influence on the soft magnetic properties of the resulting alloy. However, for application in modern medium-power transformer magnetic cores, the best additive has been found to be tungsten, as it improved the most important electro-technical parameters of the material