

Structural and High-Temperature Thermoelectric Properties of *p*-type Na, Mo co-doped Bi₂Sr₂Co₂O_y Ceramics

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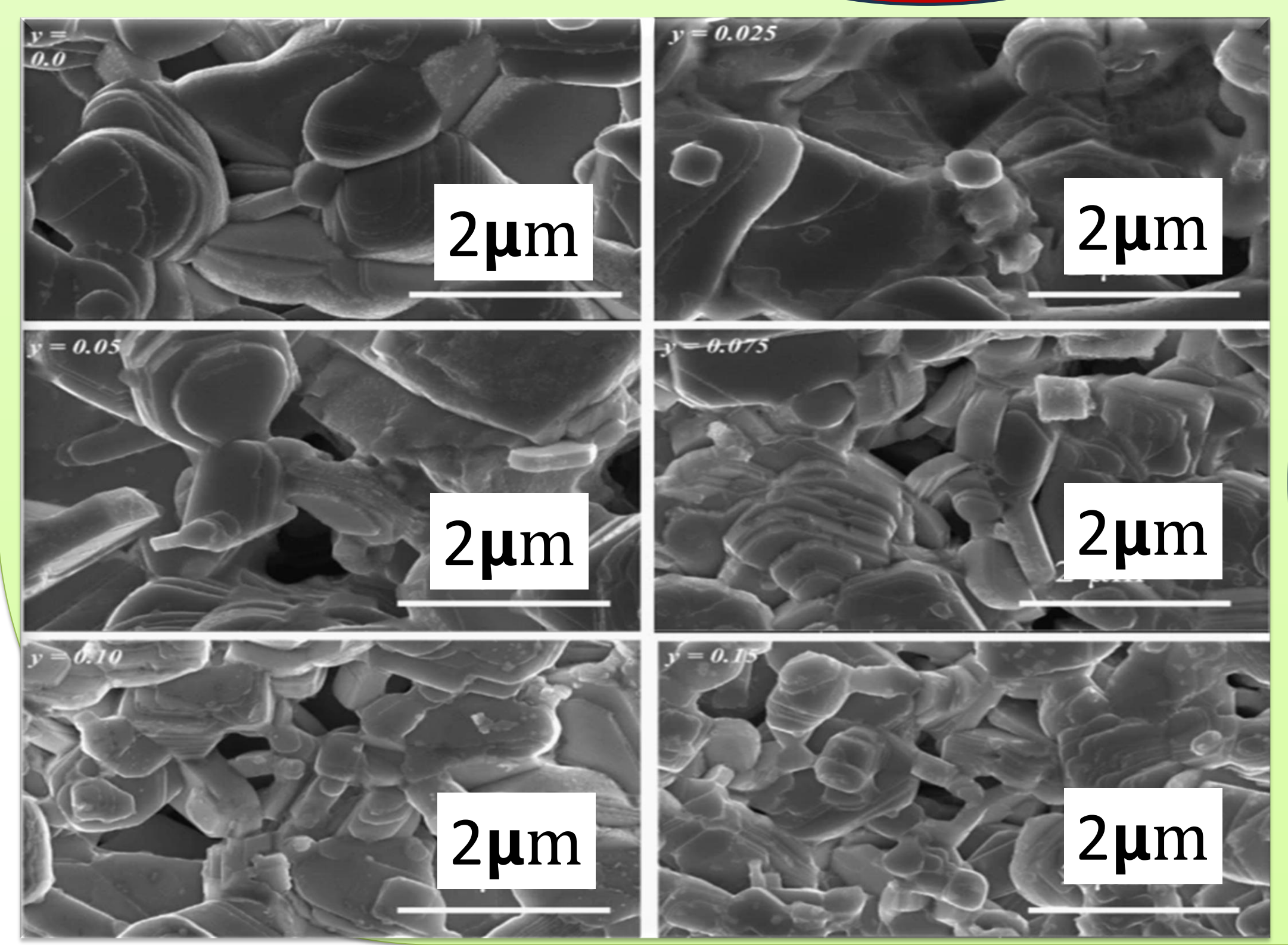
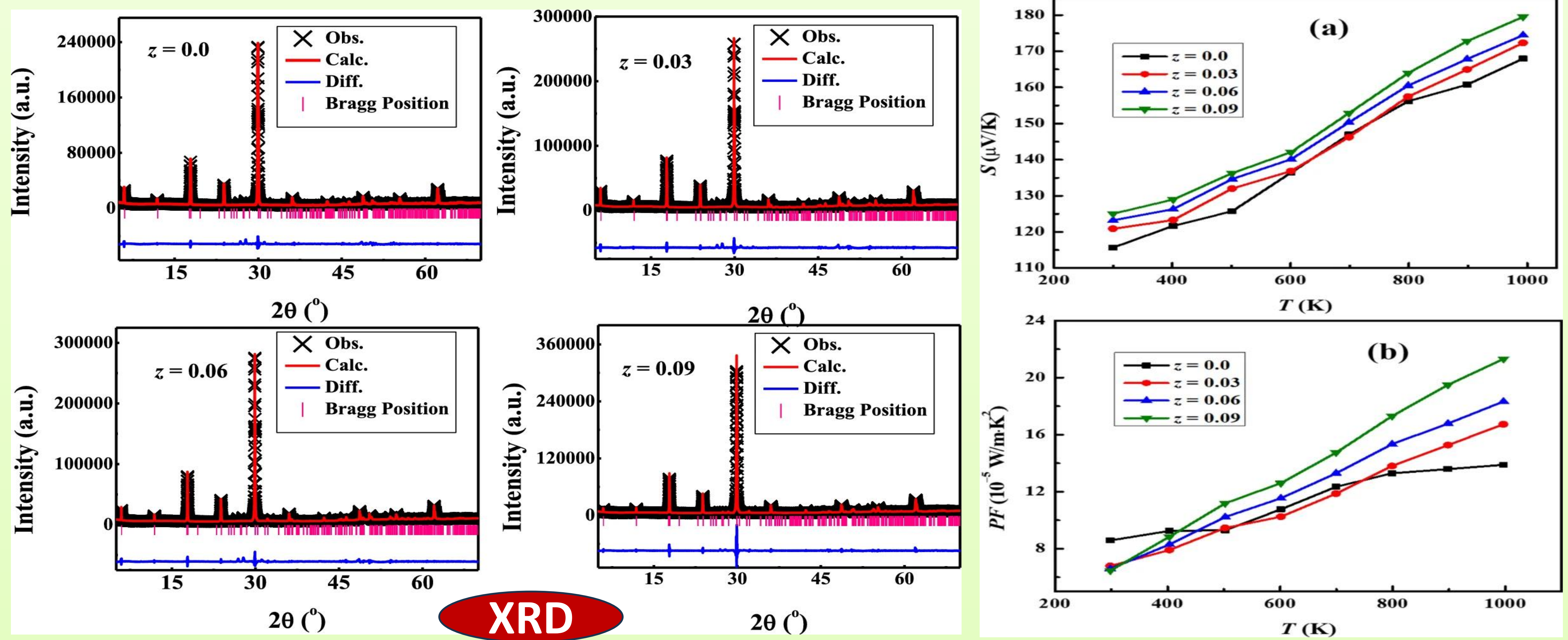
Thermoelectric Figure of Merit (*zT*)

- ❖ Alloys
 - ❖ Half-Heusler
 - ❖ Skutterudites
- Issues

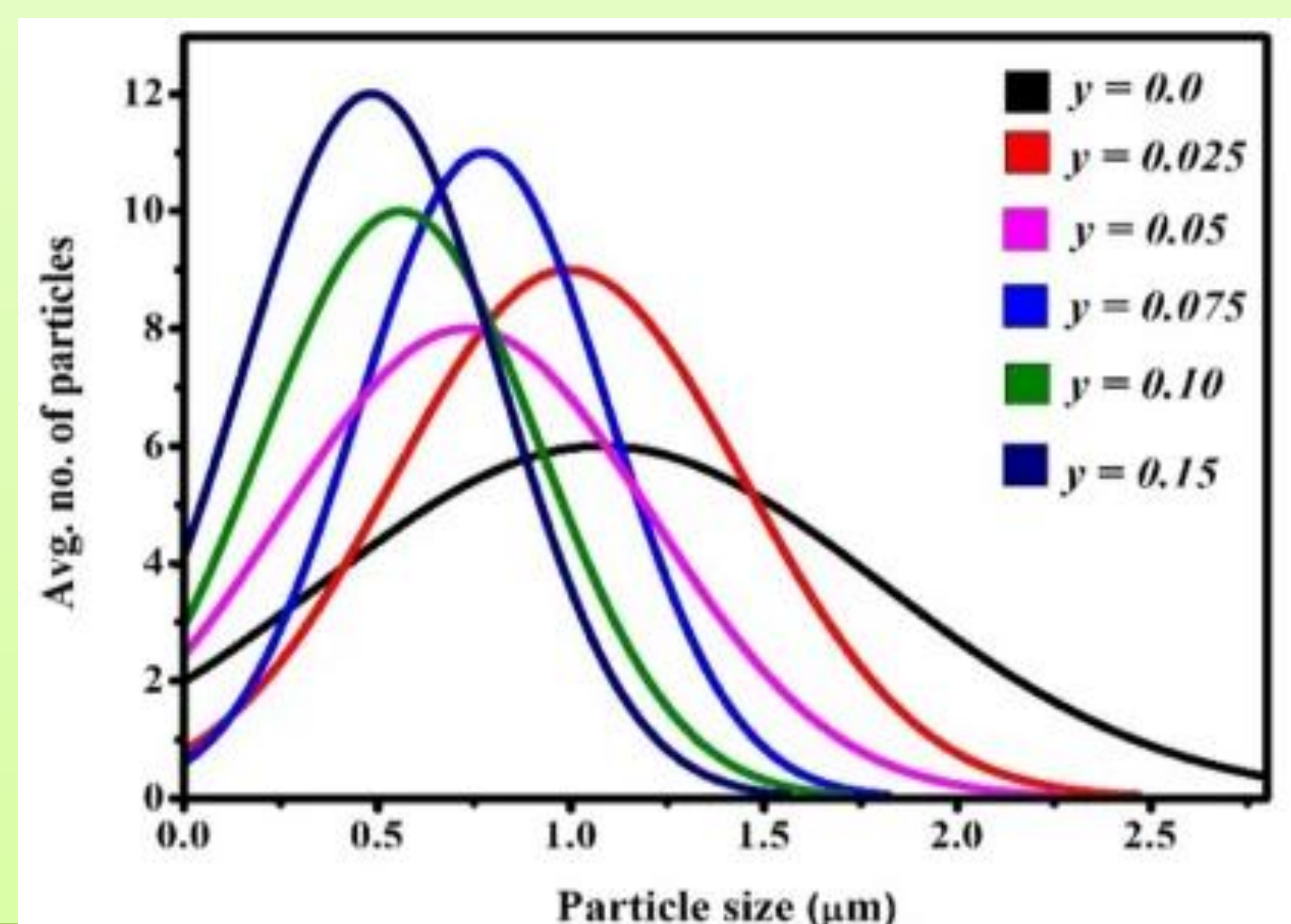
 - Toxic
 - Stability issues
 - Expensive
- Why oxides?

 - Non-toxic
 - Cheap
 - Stability

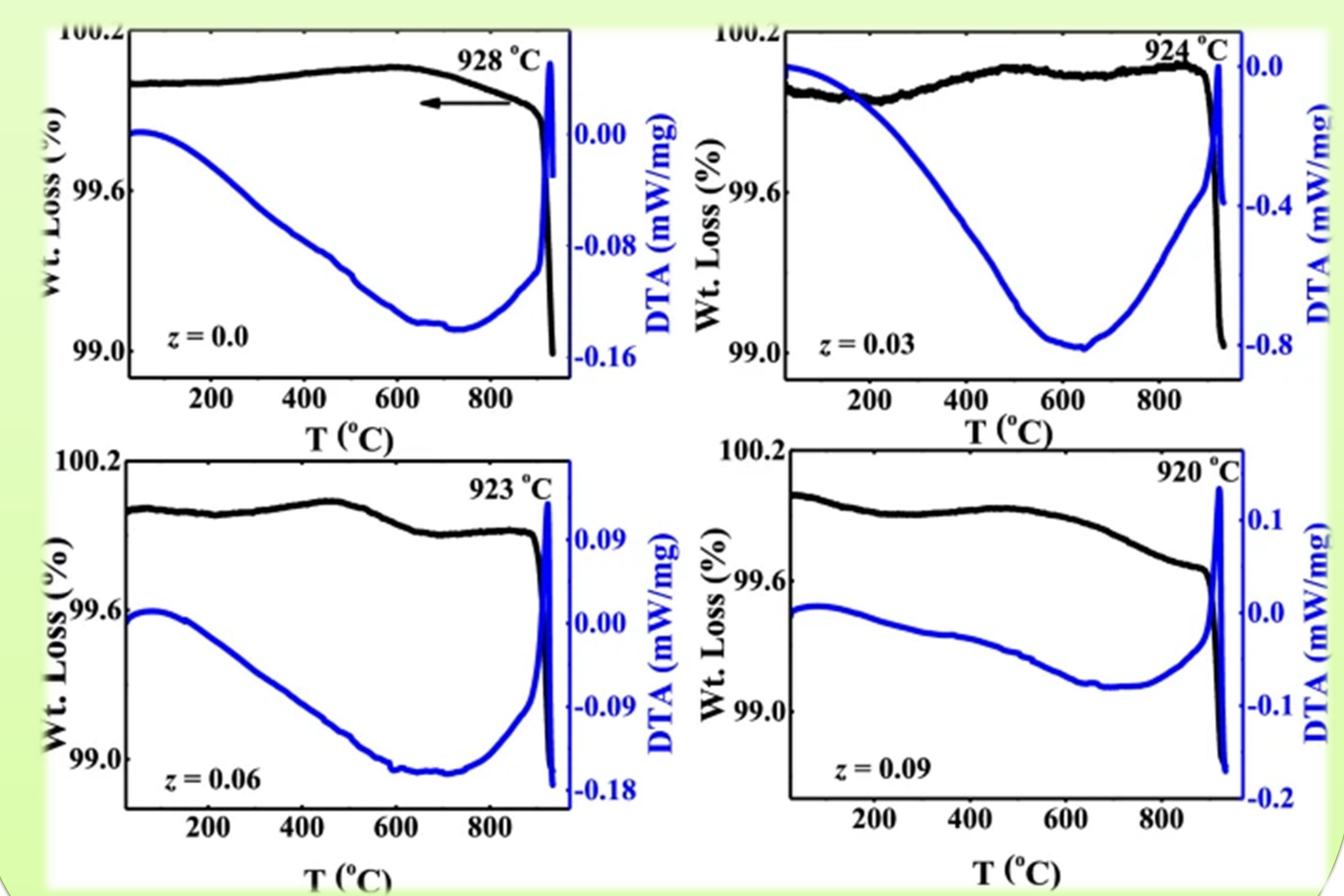
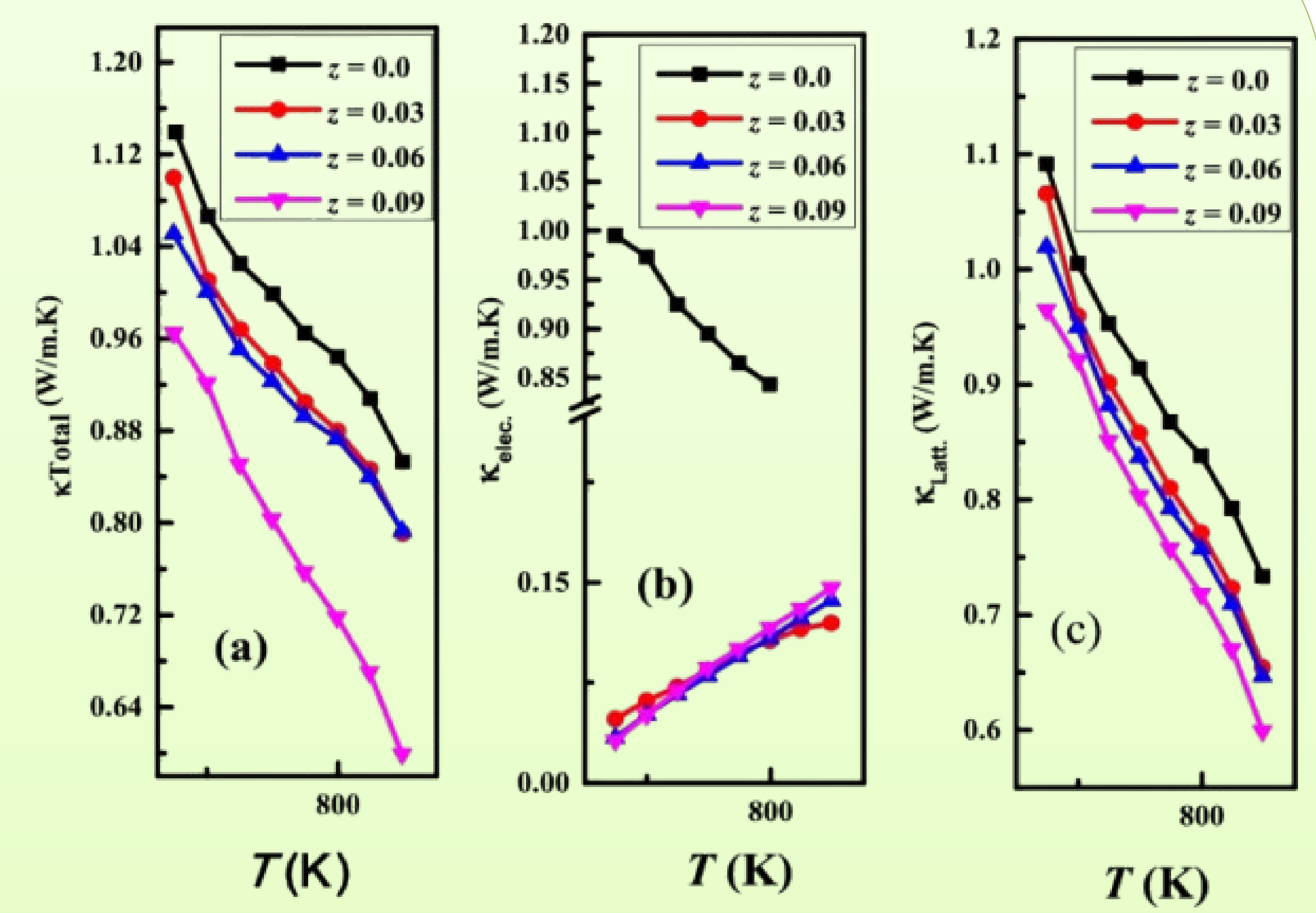
TE Power Factor



SEM



Bi_{2-2z}Na_{2z}Sr₂Co_{2-z}Mo_zO_y (0 ≤ *z* ≤ 0.09)



TGA/DTA

Sustainable Development Goals

- SDG 7 – Affordable and Clean Energy**
"Turning waste heat into clean power for a sustainable future."
- SDG 9 – Industry, Innovation and Infrastructure**
"Innovative ceramics driving next-generation energy technologies."
- SDG 12 – Responsible Consumption and Production**
"Efficient energy use for smarter, sustainable production."
- SDG 13 – Climate Action**
"Cutting emissions through advanced thermoelectric solutions."

Conclusion

Na, Mo co-doped Bi₂Sr₂Co₂O_y ceramics with stable layered structures showed enhanced thermoelectric performance, achieving a peak *zT* of ~0.28 at 1000 K, making them promising for high-temperature applications.

Acknowledgments

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