

Heat-absorbing glass developed in Microwave heating

IPR STATUS

Patented

APPLICATION/USES

NIR Laser safety glass, IR absorbing filter: projector lens and other optical devices where the heating effect of intense light source needs to be eliminated

SALIENT FEATURES

- Melting time and power consumption reduction by energy efficient microwave heating
- Enhanced visible transmission with cutting off the NIR transmission (Maximum Visible Transmission: 83% (at 550 nm); NIR Transmission: 0.03% (at 1050 nm) in a 3 mm thick sample)
- Glass melting optimized in non-metallic crucible (cost minimization due to avoiding Platinum crucible)
- The comfortable working atmosphere surrounding the MW furnace, unlike in oil-fired or resistance-heating furnaces, leads to minimizing the emission of greenhouse gasses.

LEVEL/SCALE OF DEVELOPMENT

- 250 g glass has been prepared. (TRL 4/5)

LINE MINISTRY MAPPING/USER SECTOR

- Ministry of Environment, Forest and Climate Change (MoEF&CC)
- Ministry of Defence
- Ministry of Commerce and Industry
- Ministry of Science and Technology

TRL: 4/5

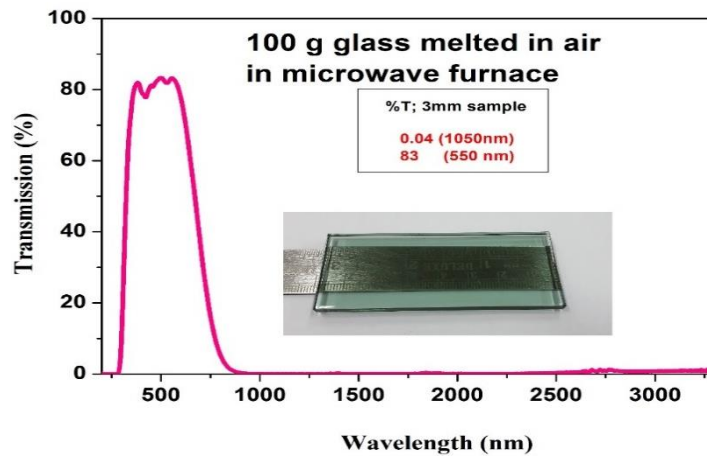


Figure 1: Visible transmission from the heat absorbing glass with NIR cutoff.

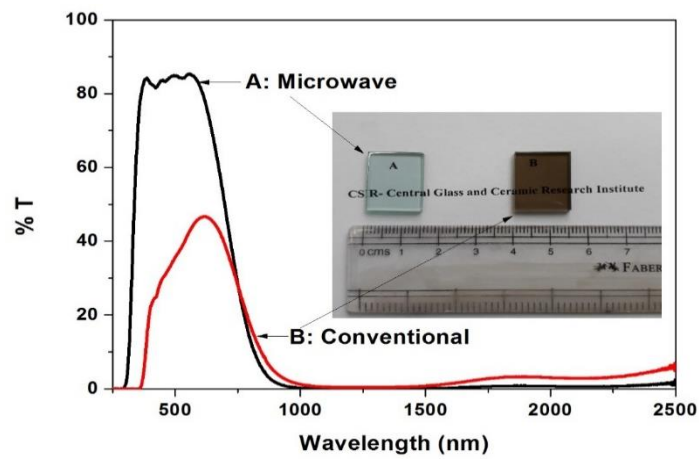


Figure 2: A comparative transmission profile of the heat absorbing glass prepared in microwave as well as in conventional heating furnace