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Title:Vacuum electronic high power terahertz sources
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Abstract:Recent research and development has been incredibly successful at advancing the capabilities for vacuum electronic device (VED) sources of powerful terahertz (THz) and near-THz coherent radiation, both CW or average and pulsed. Currently, the VED source portfolio covers over 12 orders of magnitude in power (mW-to-GW) and two orders of magnitude in frequency (from < 0.1 to > 10THz). Further advances are still possible and anticipated. They will be enabled by improved understanding of fundamental beam-wave interactions, electromagnetic mode competition and mode control, along with research and development of new materials, fabrication methods, cathodes, electron beam alignment and focusing, magnet technologies, THz metrology and advanced, broadband output radiation coupling techniques.
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