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Sommario/riassunto	Carbon intensive industries are at a crossroads. Long-term manufacturing plans using pyrometallurgical processes all include decarbonization levers: we must solve the problem of fossil-based reduction and fossil-based power generation processes for metals production. This collection explores innovative and diverse strategies for the enablement of low carbon industries in the high-temperature metals and materials processing fields. In particular, the following processes are investigated: · Electrolysis and electrification of metallurgical processes · High-temperature electrolytic routes for metal and alloy production · Use of hydrogen and other alternative non-

carbonaceous reducing agents · Biofuels and other non-fossil reagents for metallurgical applications · Direct and indirect use of solar energy in high-temperature processing · Energy efficiency and waste heat recovery concepts applied to pyrometallurgical operations.