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First principles investigation on chemical bonding of transition metal borides and carbides

Junshan Wang

Aerospace Research Institute of Material & Processing Technology

Yanchun Zhou

Aerospace Research Institute of Material & Processing Technology

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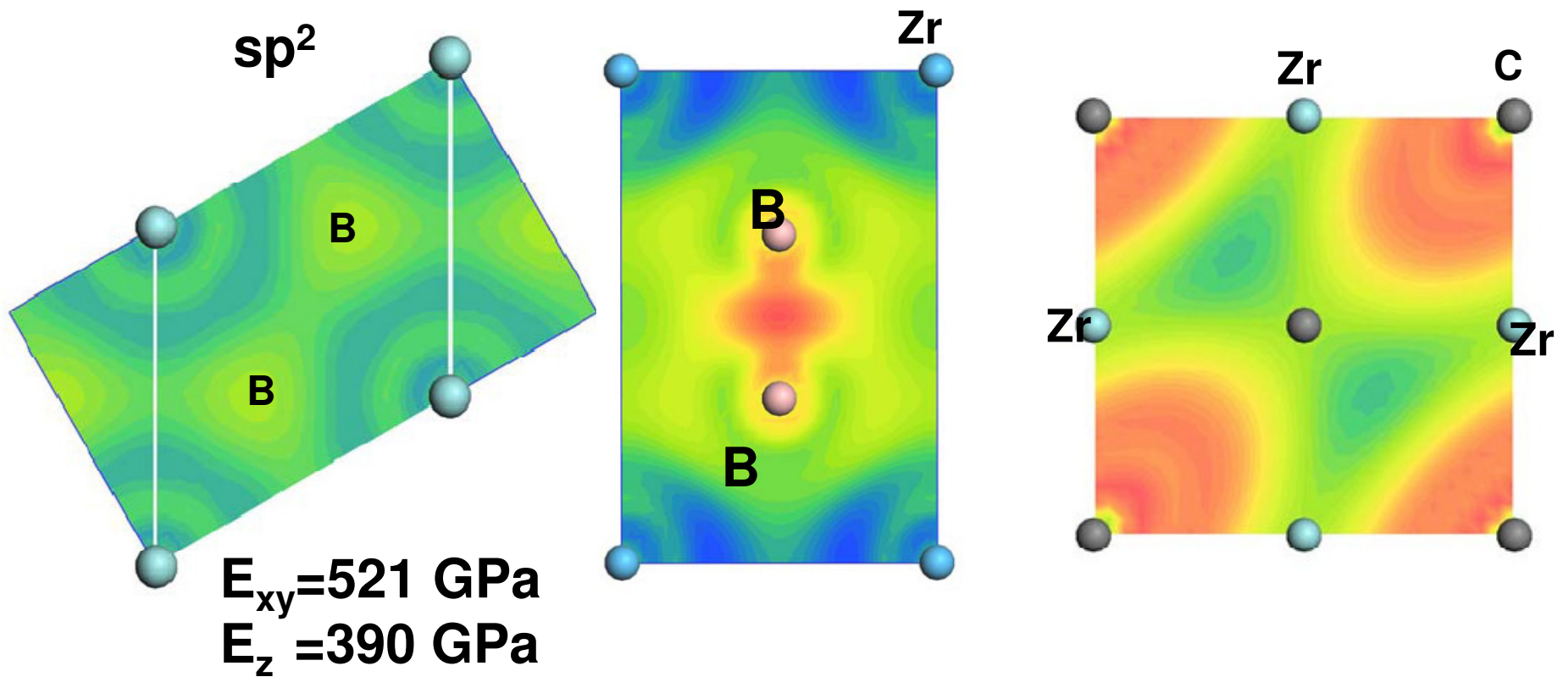
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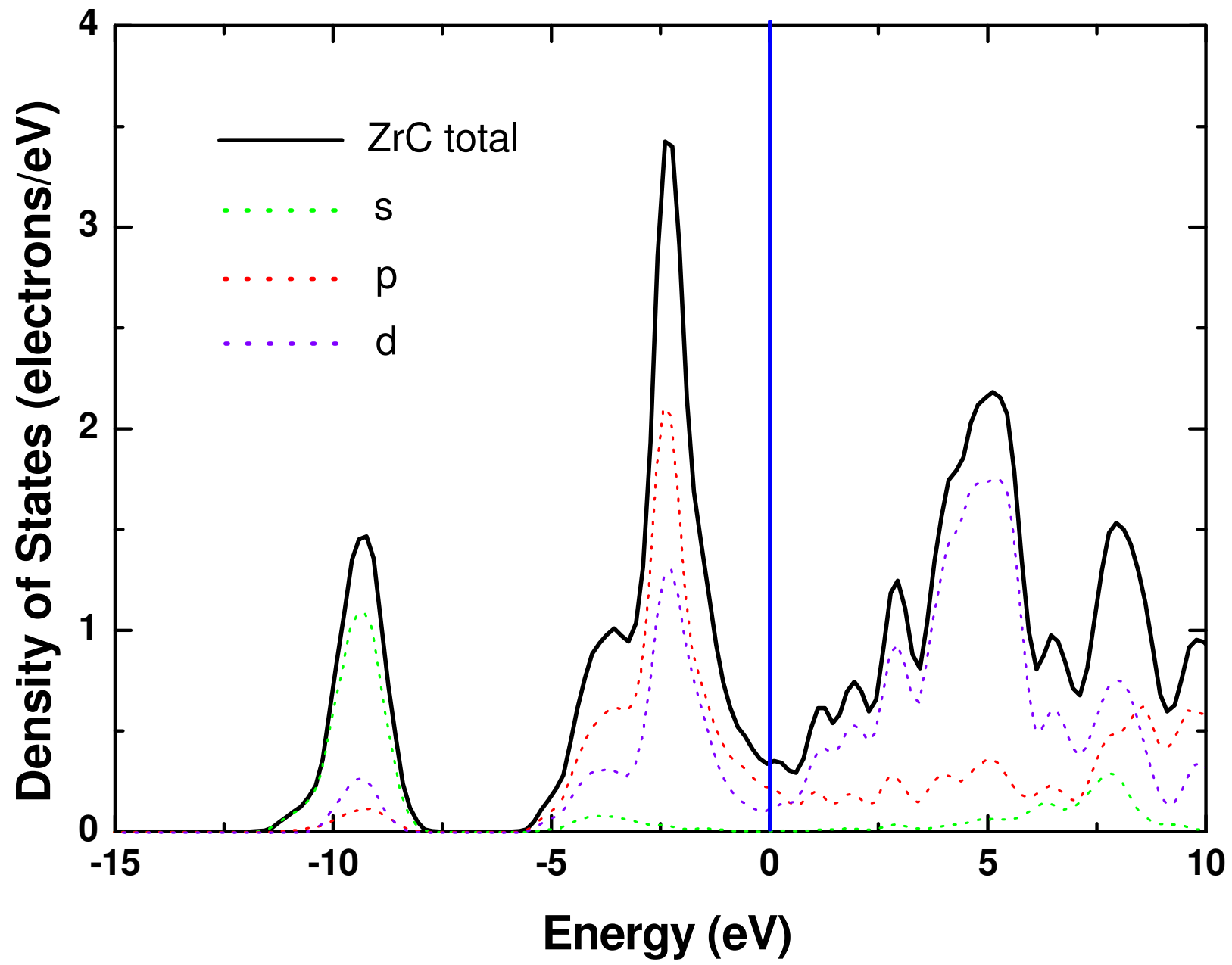
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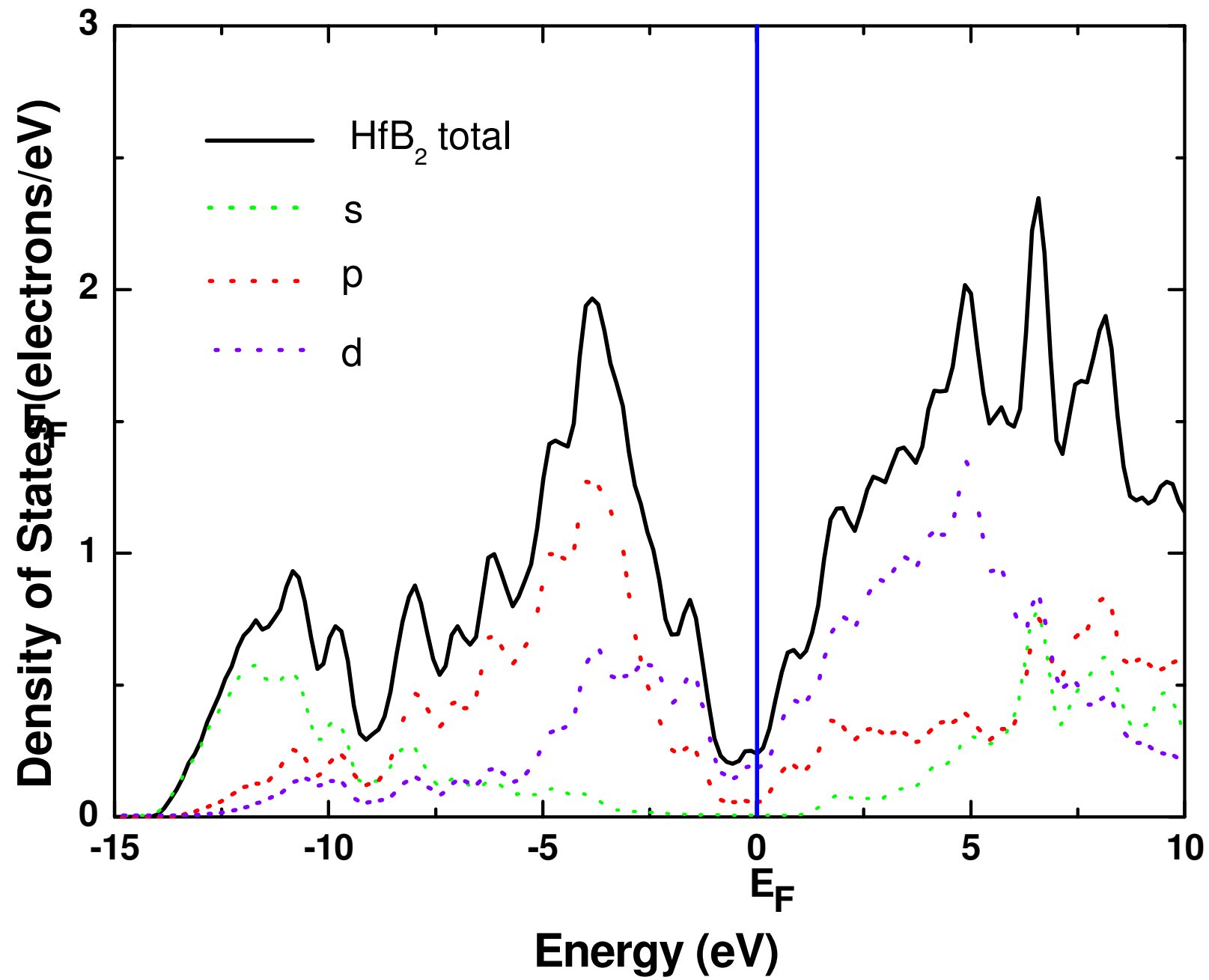
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Elastic properties of transition metal carbides and borides

	E_x (GPa)	E_y (GPa)	E_z (GPa)	E (GPa)	B (GPa)	G (GPa)	G/E
ZrC	410.52	410.52	410.52	407	221.59	161.89	0.72
ZrB ₂	521.10	521.10	390.43	523	238.31	230.98	0.96
HfB ₂	537.51	537.51	403.73	542	261.35	232.71	0.89
NbB ₂	522.86	522.86	387.75	525	288.87	219.79	0.76
TaB ₂	486.25	486.25	354.00	480	299.63	169.74	0.56

