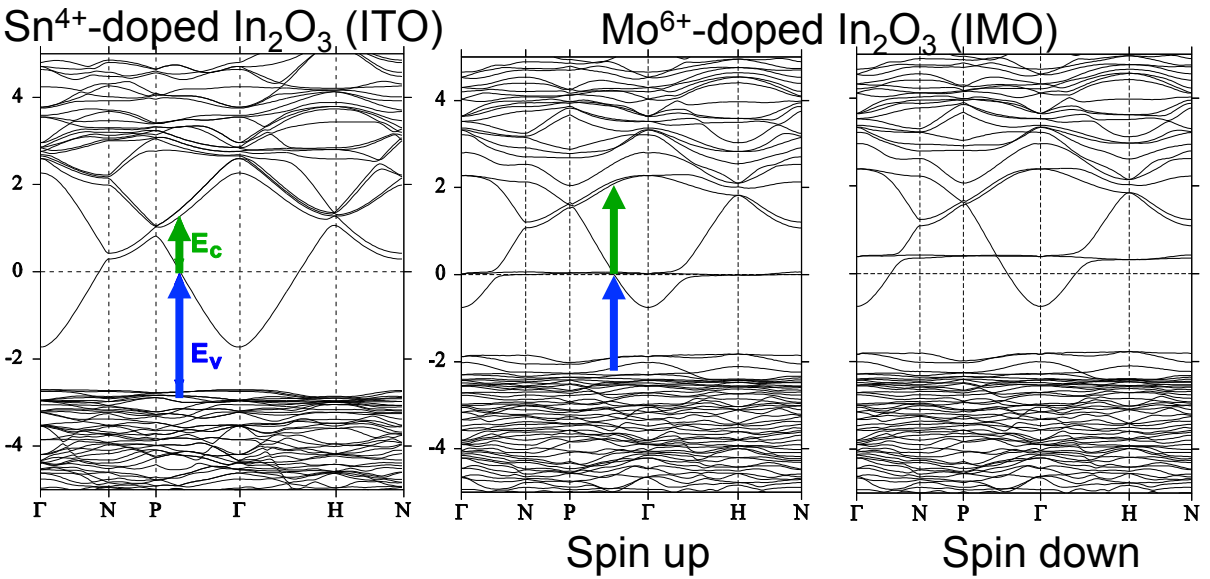
Transition metal dopants as alternative

Mo-doped In_2O_3: mobility is two times larger than in ITO

$\Rightarrow$ conductivity is increased with no changes in the transmittance



	M	k_F	ω_p
$Mo^{\bullet\bullet\bullet}_{In1}$	1.85	0.15	1.63
$Mo^{\bullet\bullet\bullet}_{In2}$	1.32	0.19	2.05
$[Mo+O_i]^{\bullet}$	0.50	0.13	1.27
$Sn^{\bullet}$	-	0.20	2.29
$e^{\bullet}$	-	0.20	2.38

Smaller BM shift due to filling of the localized Mo *d*-states leads to:

- Smaller increase of m*
- Larger E_c
- Smaller plasma frequency

Similar behavior in other hosts and with other TM dopants provided:

- Large enough E_g to keep the E_v transitions out of the visible
- Small exchange splitting to keep $d^{\uparrow}$-$d^{\downarrow}$ transitions out of the visible

J. Medvedeva, PRL (2006)