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Prof. Mamoru Senna
Keio University, Yokohama, Japan

*Smart solid state processes and elucidation
of the real structure toward functional com-
plex oxides and oxifluorides*

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Newtonstr. 14, 12489 Berlin***

Abstract:

Upon sound scientific bases, affordable solid state processes have been explored and developed. Basic concept includes to obtain well-defined oxide-based nanocomposites by starting from homogeneous precursor, to utilize phenomena at the interface between inorganic – organic solids and to spare energy exerted. The body of the talk comprises experimental case studies recently carried out by the author with a number of co-workers in Europe and Japan, among others: (1) fluorination of oxide nanoparticles, (2) solid state reduction of fumed silica to SiO via a solid state route, and (3) low temperature solid state synthesis of cubic $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ for all solid state Li-ion battery.