

In this work, we explored the potential of bacteriochlorophyll *a* for its use in dye-sensitized solar cells. Bacteriochlorophyll *a* absorbs in the near-infrared spectral region where most of the pigments tested in dye-sensitized solar cells absorb poorly. It turned out that bacteriochlorophyll *a* rapidly oxidize to chlorophyl-like molecule at aerobic conditions, what is connected with an undesirable shift of the main absorption band to the shorter wavelengths.

Therefore we prepared also several derivatives of bacteriochlorophyll *a* with similar absorption and tested their stability. We also studied a performance of solar cells with bacteriochlorophyll *a* and those derivatives, namely bacteriopurpurin, bacteriochlorophyllin and bacteriochlorin. It turned out that bacteriochlorin is the most stable of all the tested pigments. Moreover, it exhibits the best performance when used in the dye-sensitize solar cell.