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## Classical Demonstrations Performed to a New Beat

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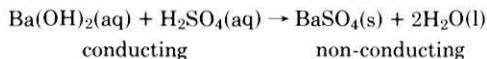
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## Classical Demonstrations Performed to a New Beat

Recently, Harris<sup>1</sup> commented on the utility of demonstrations in his classroom. His mention of one of his favorite demonstrations prompts us to report an innovative approach we have taken to performing similar demonstrations.

During the course of many demonstrations there is considerable dead time at two critical points: (1) at the beginning while the equipment is being set up and (2) later while waiting for reactions to occur or end points to be reached. A running commentary by the instructor at times is insufficient to fill such a void. We have discovered that background music not only breaks the silence but also holds student interest during such lull periods. Interestingly, our most effective demonstration has been the same conductometric titration mentioned by Harris performed to the theme music from *2001: A Space Odyssey* and carried out in total silence on our part. While students listened<sup>2</sup> to the opening measures of the score, the equation for the reaction was written on the blackboard:



As the beaker containing barium hydroxide solution and a stirring bar was placed on a magnetic stirrer, a motion was made to the appropriate formula on the blackboard and likewise when a solution of sulfuric acid was added to the buret a similar gesture was made. A light bulb conductivity apparatus<sup>3</sup> was immersed in the solution and the house lights were extinguished; the titration began. As the haunting melody came over the speakers, the music seemed to move the titration on to its conclusion in total darkness. Once the equivalence point was passed the light began increasing in brightness until finally the music reached its climax. When the house lights were raised it was obvious that the students were enthused and excited. They had experienced a demonstration they would remember long after the course was over.

Other classical demonstrations such as the nylon rope synthesis take on a new excitement when accompanied by "Foggy Mountain Breakdown" (theme music from *Bonnie and Clyde*). Sousa's "Stars and Stripes Forever" adds a patriotic flare to a red, white, and blue ammonia fountain demonstration.

Recordings such as those mentioned are guaranteed to enliven even the most mundane demonstration.

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<sup>1</sup> Harris, Sidney P., *J. CHEM. EDUC.*, **57**, 445 (1980).

<sup>2</sup> A stereo cassette tape player with external speakers is convenient and effective.

<sup>3</sup> This item may be purchased from Sargent-Welch Scientific S-29761-50.

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